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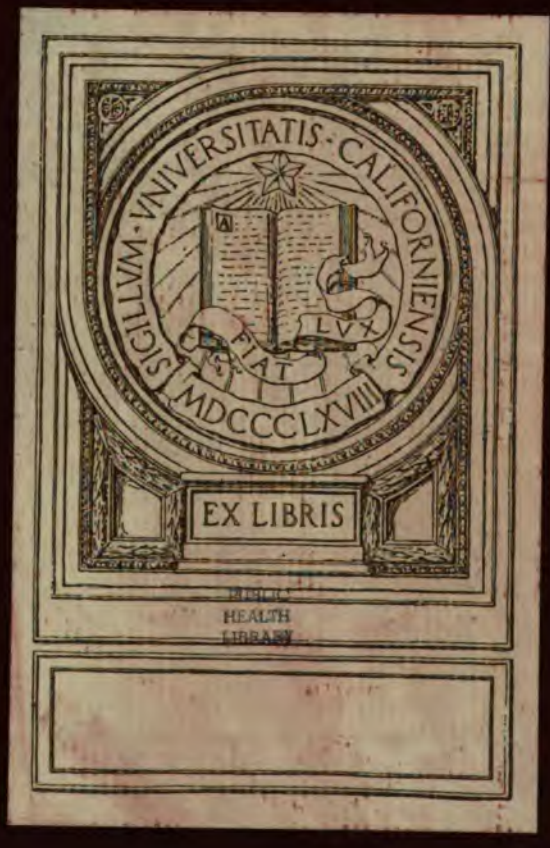

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THE BOSTON CITY HOSPITAL.
Main Façade.

A HISTORY

OF THE

BOSTON CITY HOSPITAL

FROM ITS FOUNDATION UNTIL 1904

AUTHORIZED BY THE TRUSTEES AND EDITED BY A

COMMITTEE OF THE HOSPITAL STAFF

DAVID W. CHEEVER, M.D. A. LAWRENCE MASON, M.D.
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BOSTON
MUNICIPAL PRINTING OFFICE
1906

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PREFACE.

THIS History covers forty years of The Boston City Hospital's existence. It was thought wiser to compile it for that period rather than to wait fifty years, when some of the present editors might not be living. Already only two of the original members of the Hospital Staff, Drs. David W. Cheever and John G. Blake, remain.

During these forty years the number of beds has increased fourfold, and the number of the staff in the same ratio. Many new departments have been created, and we have endeavored to do justice to them all.

It is with mingled feelings of pride and regret that the editors complete this volume; the former sentiment inspired by what the Hospital has become and has accomplished; the latter that some of them can no longer take active part in its future progress and achievements. These forty years in surgery and in medicine have seen the discovery and the established use of the three marvels of Asepsis, the Toxines and the Roentgen Ray.

THE EDITORS.

May, 1906.

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I.

HISTORICAL DESCRIPTION OF THE BUILDINGS AND GROUNDS OF THE BOSTON CITY HOSPITAL.

By George H. M. Rowe, M.D.,
Superintendent and Resident Physician.

One index of the intelligence and public spirit of a community is the way in which it provides for the needs of the sick and the poor. Boston, in establishing and maintaining a Municipal Hospital, now grown to large proportions, has given proof of a humanitarian spirit and a civic intelligence second to no city in the United States.

EARLY HISTORY.

Beginning in 1849, with lapses of several years at different periods, the question of establishing a hospital for the worthy poor who are citizens of Boston was, at various times, agitated. The project, however, did not take definite shape until 1861. On June 13 of that year it was voted by the City Council that the Committee on City Hospital present plans for a hospital to cost not more than $100,000. This Joint Standing Committee of the City Council on City Hospital, consisting of Thomas C. Amory, Jr., Elisha T. Wilson, Prescott Barker, Sumner Crosby and George W. Sprague, made a formal report to the City Council. At this time the city received a legacy of $26,000 from Elisha Goodnow, a former resident of South Boston, upon condition that, with other sums of money, it should be devoted to the erection of a hospital, situated in Wards 11 or 12, which at that time were the wards of South Boston and the South End. It was thought that the only suitable sites in South Boston were

"too far removed from the city proper," and after much deliberation the present site was decided. According to present advanced hospital science, this was an unfortunate and unhygienic site. The old Roxbury canal, which carried the sewage of Roxbury to tide-water, ran through one corner of the premises, and a considerable portion of the land was salt water flats, largely of dock mud. The city already was in possession of this land, and, therefore, would not have to expend what was then considered a considerable sum for the purchase of a better site elsewhere. Roxbury, which had many excellent sites for a hospital, was not at that time a part of the City of Boston. The South End was the "court end" of the town, and the Back Bay was practically not in existence. These may have been, in the light of things as they were in the decade of the 60's, reasonable grounds for locating the Hospital where it now is. The promoters themselves had misgivings that it was not the best site, for Mr. Thomas C. Amory, Jr., in the dedicatory address delivered by him at the opening of the Hospital, said: "The responsibility of selecting a location had been assumed by our predecessors, but doubts had arisen if this were of all others the one to be preferred. A site on solid ground, more central, more elevated, and nearer to the sea seemed more eligible, if to be obtained. But to each and every spot were found objections, outweighing any advantage, if possessed. Finally, discouraged, we returned to our earlier choice. Here we had ample space. The public domain of seventy acres could well spare one-tenth of its area for so sacred a purpose."

On March 27, 1858, the City of Boston was authorized to establish a City Hospital (Acts of 1858, chapter 113). By the Acts of the Commonwealth of 1880, chapter 774, the Hospital was incorporated under the name of "The Trustees of the City Hospital of the City of Boston." In the year 1893, Acts of the Commonwealth, chapter 91, the name of "The Trustees of the City Hospital of the City of Boston" was changed to "The Boston City Hospital." The ordinance of the City of Boston relating to the City Hospital will be found in the Revised Ordinances of the year 1892, chapter 16. It therefore appears that the Hospital has two names, —

the one, "The Boston City Hospital," incorporated by the Commonwealth, and the "Hospital Department," the designation by which the Hospital is known in municipal divisions. The Hospital Department is divided into four sub-departments. Each has a subordinate head, and its finances and expenditures are kept separate. They are as follows: The Hospital proper, on the area bounded by Harrison avenue, East Concord street, Albany street and Massachusetts avenue, containing 430,963 square feet, or 9.9 acres; the South Department, 745 Massachusetts avenue, containing 125,736 square feet, or 2.9 acres; the ambulance station, boiler and dynamo house, coal-pocket and wharf, Albany street, containing 69,785 square feet, or 1.6 acres; the Convalescent Home, Dorchester avenue, Dorchester, containing 610,500 square feet, or 14 acres; and the Relief Station, Haymarket square, 8,507 square feet, or 0.2 acres; making a total of 1,245,491 square feet, or 28.6 acres.

The total of the appropriations passed by the City Council from July 2, 1861, to July 22, 1905, was $2,766,579.06. This sum does not include appropriations for annual maintenance nor for furnishing, but appropriations either for new buildings or for the purchase of land. It is doubtful if any municipality in the United States, during a similar period, has been so liberal and appreciative of the work a hospital has to perform as the various City Governments under which these appropriations have been made.

GROWTH OF THE HOSPITAL.

It is interesting, at this point, to mention the growth of the Hospital Department in the number of beds for patients.

The bed capacity of the Hospital in 1864 was 208; in 1868, 292; in 1876, 325; in 1885, 425; in 1888, 485, and with a tent service during the five summer months of 72 beds, placed the total capacity of the Hospital proper at 557 beds during the summer months; in 1890, 520; and in 1906, 615. If the beds are considered by departments the capacity is as follows:

Hospital proper	615
South Department	264
Relief Station	20
Convalescent Home	36
Total for the Hospital Department	935

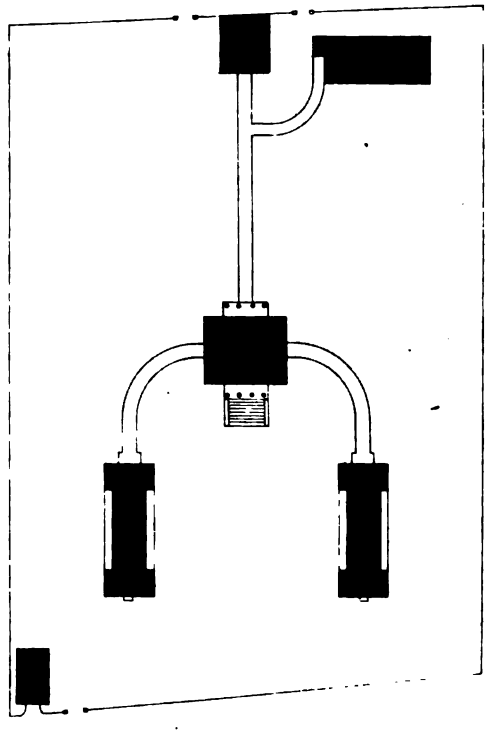
The distribution of beds in the main Hospital at the close of 1905 was as follows:

	Ward.		Private.		Total.
	Male.	Female.	Male.	Female.	
Surgical	180	112	23	15	330
Medical	116	84	9	6	215
Gynæcological	.....	52	.....	4	56
Ophthalmic and Aural	6	8	.....	.....	14
	302	256	32	25	615

SITE.

The Hospital site had previously been used for the so-called Agricultural Fair Grounds at the South End of Boston. At high tides the land was flooded. The site is what is known as "made land," and gravel used in bringing the grounds to proper level was brought from Braintree. The average grade of the surface is 7 feet above the original level, and the ground grade of the buildings is fully 17 feet above mean low water. At that time this was considered sufficiently solid for a foundation for the buildings, piles being driven to the usual depth. The floors of the basement were 3½ feet below the ground level. The buildings, as originally constructed, had about forty patients in the basements. It was found after some years, however, that because the basement floors were 3½ feet below the average grade there was a great deal of dampness, and the method of construction did not provide for the exclusion of dampness. Extensive bacteriological experiments were made of

the air by cultures taken in the basement, which were found to have innumerable colonies of moulds. Again, the amount of carbonic acid gas in country pastures, or in the woods, is only a small fraction of 1 per cent.; in cities and towns, 2 to 3 per cent. The amount of carbonic acid gas, found not from borings upon the ground, but from various places



I.—BLOCK PLAN, 1864-69.

throughout the basement, showed that there was 5 to 6 per cent. of carbonic acid gas. These conditions caused great deterioration in the Hospital buildings, but they would not have been recognized except for actual scientific tests. Practically the same may be said of two other hospitals in Boston, a good portion of whose buildings are located upon

reclaimed land. Expediency is not always the best policy, and although a large and notable collection of buildings has been constructed and safely maintained, the Hospital cannot attribute any of its success to an advantageous site, if seen from a scientific point of view.

The Hospital was unfortunate in the arrangement of its buildings, from the fact that the original buildings extended northwest to southeast, and could not readily be arranged parallel with the surrounding streets so as to get the great benefit of a southern exposure. As was originally intended, some of the pavilions were located upon the northwest and southeast axis, which was equally unfortunate. Thus the true hospital axiom of a southern exposure, now generally accepted, was violated in order to avoid the cost of purchasing a proper site. It was proposed, as there were no buildings between Albany street and tide-water, and it was not foreseen that this would be wanted for commercial purposes, to establish a park between the Hospital grounds and tide-water, and plant a promenade of shade trees. Not even the malodorous breezes from the putrid South bay disconcerted the City Fathers at that time. In spite of various other unwise and impracticable reasons, it was decided to locate the Hospital on its present site.

Another objection at that time was its "great distance from the centre of the population." But the unforeseen and extensive growth of the South End of the city, and the taking of Roxbury and other towns on the south into the municipality, now makes the Hospital conveniently central and has proved perhaps the only reasonable justification for its location.

ORIGINAL BUILDINGS.

In the preliminary study for the plans for the Hospital buildings, the literature upon the subject, if not condensed, would make a considerable volume by itself. The most notable writing upon this subject was that offered in a report of the "Committee on a Free Hospital," in 1861; "City Hospitals," by John Green, M. D., a member of the Massachusetts Medical Society, and "Outlines of a Plan for a Free

City Hospital," by Henry G. Clark, M. D.; Boston, 1861, p. 18. The limits of this paper forbid a presentation of the opinions of eminent physicians of that era, or the plans of architects, preliminary to the construction of the Hospital. The plans finally accepted were made by Gridley F. J. Bryant, to whom, with his assistants, belongs the credit for the architecture of the buildings as they stood in the first decade of the Hospital history.

Ground was broken for the City Hospital September 9, 1861. The area was 292,633 square feet, or about 6.7 acres. The assessed valuation was $73,000.

CITY HOSPITAL, SOUTHWESTERN ELEVATION, 1864.

Four buildings constituted the original group: the Administration Building, Pavilion I (Wards A, B, C and D), Pavilion II (Wards E, F, G and H) and the boiler-house on Albany street, at the extreme end of a long corridor running south from the Administration Building. All the buildings were French renaissance in their general style.

The Administration Building is an imposing structure, making an admirable centre for a hospital group. It is constructed of brick, upon granite basement walls, with granite trimmings on the upper stories. The first plan of having the ornamental parts made of carved granite was abandoned as the work progressed, on account of the very

great expense, and wooden columns, balustrades and porches were substituted. It is three stories high, with a large, high basement. It is entered by a flight of eighteen stone steps, forty-two feet wide between buttresses. It is surmounted by a stately dome, crowned with a lantern, whose apex is 148 feet above the level of the street. The building is surrounded by a heavy cornice with dentils and balustrades, in harmony with the rest of the buildings. Both the front and rear have projecting porches, supported by four large Corinthian columns, better adapted to a more pretentious edifice than the administration building of a municipal hospital.

The basement rooms are thirteen feet high, with a sub-basement concreted upon the earth beneath. The lower story is used for a kitchen, with store-rooms, a dispensary, laboratory and store-room purposes, dining-rooms for employees and help, clerks' and steward's store-room. The first story is sixteen feet high, and, as originally intended, was used for general administrative purposes; a large trustees' office, superintendent's office, reception-room for visitors, and two rooms assigned as superintendent's apartments. The second floor is fourteen feet high, and was originally occupied by private rooms for patients. The rooms in the third or attic story are mostly lighted from the ceiling, and were used as accessories to operating-room and chambers for employees. Originally, the operating theatre was in the dome of this building, and remains to-day as first designed, but unoccupied. It was reached by two stairways and a lumbering hand elevator for transporting patients. This method was found to be inconvenient and laborious and was abandoned in 1876, as will be described later, with the other changes in the occupancy of this building.

Pavilion I, for surgical wards, and Pavilion II, for medical wards, are practically alike. The two pavilions, placed about 100 feet from the Administration Building and connected by a quadrant-shaped covered colonnade, were in keeping with the Administration Building, though less ornate. They are 180 feet long, 48 feet in width and three stories high, not including the basement. Each basement had a

lower floor, 3½ feet below grade of ground. On the surgical side were accident rooms, splint rooms and accident wards. The first, second and third stories were occupied as wards, each 80 feet long and 28 feet wide, the first and second stories being 16 feet high, and the upper story 10½ feet. The third stories of these buildings were not originally intended for patients, but were designated on the original drawings as rooms for employees and domestics. This, however, was abandoned, and, to reduce cost, the third stories of these two pavilions were finished as open wards. The eight wards of these two pavilions are still vividly remembered as the scene of professional work by the older physicians and surgeons now connected with the Hospital. They can also recall, with regret, some of the defects and mistakes made in connection with them, especially in the heating and ventilating system, which will be described later.

These buildings, without much change, stood from 1864 until 1875, when radical changes were made, particularly in the plumbing and arrangement of the duty-room, linen-room, etc. They were again reconstructed in 1891 and 1892, particularly in the plumbing, but they retain much of their original aspect, and, in spite of their coved cornices, ornate inside columns and inside slat blinds, they still remain excellent wards for the treatment of the sick, and are favorably commented upon by eminent hospital experts.

PAVILION III.

To the original group of four buildings there was added, two years later, the building intended for an isolating building, and, as viewed to-day, was called by the atrocious title of "foul wards." At that time erysipelas, hospital gangrene, pyæmia and general sepsis were very prevalent under the surgical methods of that decade. This led to the erection of Pavilion III, later known as Wards K and L. It was a two-storied brick building on the southern corner of the grounds, the main ward being for men and the second story for women, and was erected where previously lagged the old Roxbury canal, before alluded to, a villainous site for a hospital ward.

This building was substantially replaced in 1903 by another structure, to be described later. The history of this building, on account of the class of cases placed there, remains clear and distinct to the older members of the Staff, and also to those of not very remote years; and although there was much that was deplorable and pathetic in the class of cases treated there, there must be credited to its doctors and nurses the saving of hundreds of lives. The total expenditure of the building here described, from the beginning in 1861 to 1873, was $439,297. This is exclusive of the land.

THE YEARS 1867 TO 1874.

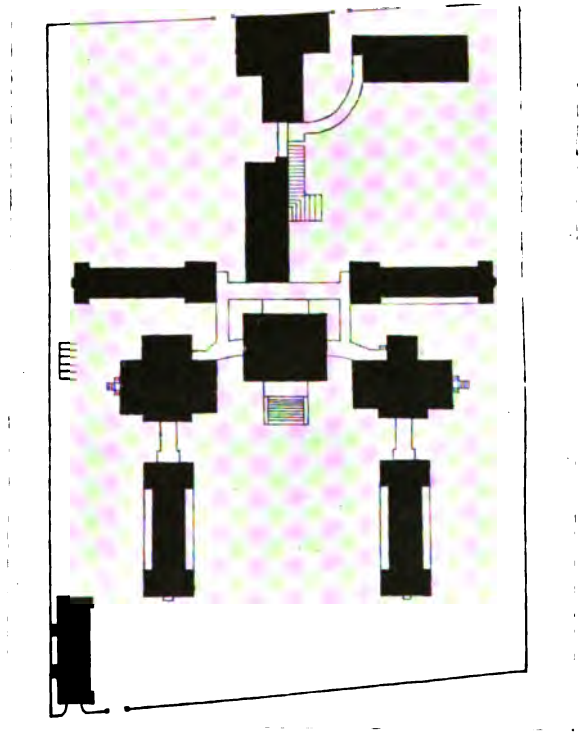
Between 1867 and 1874 a few additions were made, such as a small building at the corner of Harrison avenue and East Concord street, for waiting and examining rooms for applicants for admission, and also for a few medical out-patients. In 1874 a propagating house for the preservation of plants for the ornamentation of the grounds was constructed. Practically, however, the Hospital remained from 1867 to 1874 without any important additions. In the meantime the city was constantly increasing in its population. Year by year the number of rejections of patients grew larger and larger, the Hospital at this time containing only 235 beds, of which 40 were in the basement.

A group of buildings constructed over forty years ago for the recovery of the sick could hardly be expected to have the vantage ground of buildings constructed upon the advanced hygienic lines of modern hospitals. The professional work was then done under great disadvantages, and antiseptic surgery was unknown. The deleterious effects of dampness were not then fully appreciated, and although in the light of modern hospital construction we know that the methods then in vogue were bad, it is nevertheless true that they were up to the best knowledge of that period.

ADDITIONAL NEW BUILDINGS.

The faults of construction between 1867 and 1875 came to be fully recognized. After much agitation by the Trustees and Medical Staff, in 1874 action was taken which resulted

in an appropriation by the City Council of $190,000 for reconstructing and enlarging the Hospital. Five new buildings were erected,— a surgical building, a medical building each three stories high, with a habitable basement; two one-storied wards, one medical and one surgical, and a kitchen, bakery and refrigerators.



II.—Block Plan, 1870-79.

NEW MEDICAL AND SURGICAL BUILDINGS.

Exteriorly the new surgical and new medical buildings were upon the same levels of the floors of Pavilions I and II. They had the same general style as the two older pavilions, but were more simple on the outside, and care was taken to place them agreeably in relation to the Administration Build-

ing. These new buildings were somewhat irregular in shape, being 48 feet by 94 feet in general dimensions, with a projection of 8 feet by 48 feet from the front wall, and another of 24 feet by 52 feet from the rear wall.

The main entrance of the Surgical Building was from the north door, and was called the "Accident Door." There was a long corridor, 8 feet wide, extending through the building, and near its centre another cross corridor connecting with Ward B. Upon this floor were rooms for the Visiting Surgeons and House Staff; rooms for the reception and examination of patients; accident, splint and other accessory rooms. The principal part of this floor was taken up by the "Operating Theatre," which was a large room 49 feet by 42 feet in the clear, and 33 feet high, occupying a part of two stories of the building. This building was entirely reconstructed in 1889, so it is not necessary to give details of its previous conditions. After reconstruction it served the purposes of an ordinary surgical building, with surgical amphitheatre and auxiliary rooms. There was very little metal, glass or marble work about the building. The inside finish was readily absorbent. Sepsis was common; and antisepsis was rare. The results of operations here were the best of that period, and the percentage of recovery corresponded to that obtainable in other leading hospitals. The second story of this building was occupied as private rooms for surgical patients; the third story was a children's ward, and a few private rooms containing accommodations for twenty-six patients.

The new Medical Building contained, on the first floor, offices, examining rooms, bedrooms for house officers and a convalescent ward for eleven men patients. The second story served as a ward for women, with seven private rooms for paying patients, a large operating room for the Ophthalmic Service and an open ward for eleven women. The third story had accommodations for six private patients and thirteen women patients. All stories had the usual appointments of toilet, bath, linen and serving rooms.

THE TWO "IRON-CLAD" WARDS.

The two one-storied pavilions — Ward P, surgical, for men, and Ward T, medical, for men — were built at this time, and they have been notable wards from many points of view. These wards were opened shortly before the new antiseptic surgical methods. It was previously supposed that good surgical work was impossible, because the building, after a few years' use, was so crowded with disease germs that no open wound could do well under such conditions. These two pavilions were therefore constructed upon the general principle that, being of the cheapest possible construction, they fulfilled their mission, and should be destroyed at the end of, say, ten years, and be replaced with other cheap buildings. On the outside, these two buildings do not have a pleasing aspect. They are alike in their external and internal arrangement, and are built upon concrete foundations, with no piling. The frames are of wood, covered by two thicknesses of common boards, with paper sheathing, and made weather-proof by crimped galvanized-iron sheathing. The roof is pitched and covered with slate, and surmounted by a ventilating ridge, which will be referred to later. The interior shows a common old-fashioned ward, with an elliptically arched ceiling, lathed and plastered, a hard pine floor, with standing woodwork of varnished clear pine. The general dimensions are 138 feet long and 40 feet wide, except the central portion of the building, which is 28 feet wide. Each side of the ward has seven windows with proper allowance for fourteen beds on each side. No special comments need be made upon these two pavilions. They have the usual ward isolating-room, linen-room, clothes-room, service-room, with baths, toilets and room for convalescent patients. The notable thing about these buildings is that, after twenty-five years of constant service, they are, from a hygienic point of view, among the best of all the Hospital wards. The arrangement of the heating and ventilation furnishes a larger amount of heated fresh air than any other ward of equal capacity. The treatment of both acute surgical and medical cases has proved as satisfactory in these

wards as in any other ward of the Hospital, and at the remarkably low construction cost of less than $750 per bed, against $5,550 per bed in a modern hospital in a large city opened within a year or two. These two wards have served a most excellent study in the subject of hospital construction. Leaving out the enormous dangers of the risk of destruction by fire of the buildings and the lives of patients, they furnish a good illustration and fruitful example of the differences between the former inexpensive *per capita* cost and the palatial requirements in some of the newer hospital wards built in this decade.

NEW KITCHEN.

The central kitchen for the Hospital was originally in the basement of the Administration Building; but like all kitchens similarly placed, it proved a great nuisance, the air of the building always being permeated with disagreeable odors of cooked food. A new and improved kitchen in the rear of the Administration Building was the fifth building in the present group mentioned. At that time it was considered fully up to the proper standard, and was a good kitchen in many of its appointments. Little need be said about it here, as in 1900 it was reconstructed and rearranged and practically made twice as large, and many times more efficient.

In addition to the five new buildings just mentioned, Pavilion I and Pavilion II underwent a large amount of intermittent reconstruction, so that at the close of 1876 the Hospital was then often spoken of as the "New City Hospital." The total cost of the five new buildings (1875–76) was $220,876, which included final finish and furnishings. The planning and erection of these buildings was done under the supervision of George W. Pope, master builder, and at that time President of the Trustees. Credit is in the largest measure due to Dr. Edward Cowles, then Superintendent, in the development of the hospital idea.

No further buildings were added to the Hospital group until 1894. During this period many improvements were made, by tearing out old construction here and there, con-

verting rooms in many places to other uses under better conditions, and by the creation of additional facilities for the work that each part of the reconstructed Hospital had to do. These new buildings permitted many changes. The operating-rooms in the dome of the Administration Building were abandoned for the new amphitheatre. The second story was vacated as a private room ward, and in its place was arranged a suite of rooms for the Superintendent's family, and two or three rooms for the upper officers. On the first floor the former dining-room for officers was converted into a reception-room. The former reception-room was made into a general business office. The Superintendent's room became the office of the Superintendent of Nurses. On the lower floor the old kitchen was turned into a dispensary and stores; the steward's stores were removed to the Surgical Building, and the steward's and clerks' offices organized. The elevator well was converted into a much needed ventilating shaft. Other less notable changes were made, all adding much to the efficiency of administration. The capacity of the Hospital at that time (1884 to 1894) was approximately 425 beds.

NURSES' HOME.

With the reconstruction of the Hospital in this period and the ever increasing number of patients, other parts grew in proportion. The number of the Staff was increased; the House Staff each year was reorganized; and the Training School grew in numbers, until in 1883 and 1884 the Hospital became very crowded in all its sub-divisions. The House Staff was obliged to sleep in rooms directly off wards, although some of the rooms were in themselves very comfortable. Many of the nurses slept in cramped quarters,—four or more in a room intended for two patients, in close proximity to the wards, and under conditions physically devitalizing and mentally discouraging. After an agitation of five or six years, the Trustees were finally given an appropriation of $51,400, and the Nurses' Home was built on East Springfield street, as it was at that day, opposite the entrance to the Hospital grounds. This building

has nothing commendable in its architecture, but the interior was well arranged, as dormitories for nurses were understood in 1885. The building is four stories high, with a lower floor above ground. Upon the main floor are two parlors, which could be used together, or divided by sliding doors. There is a reception-room, matron's parlor and bedroom, and the remainder of the first floor served as sleeping apartments for the head nurses. The second, third and fourth floors were devoted solely to bedrooms, making accommodations for sixty-eight nurses. The basement had a special heating apparatus for this house only, and also had a kitchen, dining-room, store, trunk and other utility rooms. Each story was liberally provided with baths, toilets and set bowls. The house was well ventilated, and in spite of the advances that have been made in our own Hospital, as well as others, in the twenty-two years that have passed, the Hospital was fortunate to have had so good a house, where the nurses might live by themselves, with that freedom for personal life, and healthy apartments, without which they very soon break down. The transferring of the nurses from the various unsuitable quarters in the Hospital to this dormitory increased the bed space for patients, and for a time remedied the great pressure of applicants to the Hospital, relieving the administration force of the unpleasant duty of rejecting suitable applicants for want of room. During its first years this Nurses' Home was outside the Hospital enclosure. But fortunately, by special act of the State Legislature, May 14, 1889 (Acts of 1889, Chapter 336), the City of Boston was authorized, "for the uses and purposes of the City Hospital, to take, from time to time, any part or parts of that lot or tract of land in said Boston bounded northwest by Harrison avenue, northeast by East Concord street, southeast by Albany street and southwest by Chester park, including any land used for public or private streets, ways or courts within said bounds." The promoter of this project was Hon. Henry H. Sprague, at that time a Trustee of the Hospital and a member of the State Senate.

ADDITIONAL LAND ACQUIRED.

In accordance with this Act, on July 10, 1891, East Springfield street (between Harrison avenue and Albany street) was closed and transferred to the custody of the Hospital. Between East Springfield street abandoned and East Chester park (now Massachusetts avenue) was an irregular shaped tract of land of which the city possessed about 44,650 square feet. Upon the northwest portion of this land there was erected in 1884–5, on the East Springfield street line, as then existing, a Nurses' Home. The acquisition of this street at once placed the Nurses' Home within our own grounds. There was a tract of land at the southern portion of this tract which belonged to the devisees under the will of William Evans, about 26,880 square feet. Under the foregoing Act, the City of Boston, through the Street Commissioners, seized this piece of land, and the courts awarded to the devisees of said estate the amount of $55,820. There still remained on the northwest corner of the area under question ten houses owned by various persons. These estates were also taken possession of by the City of Boston, through the Street Commissioners, and the seizures were settled partly in court and partly by agreement, the total amount paid for the same being $101,000.

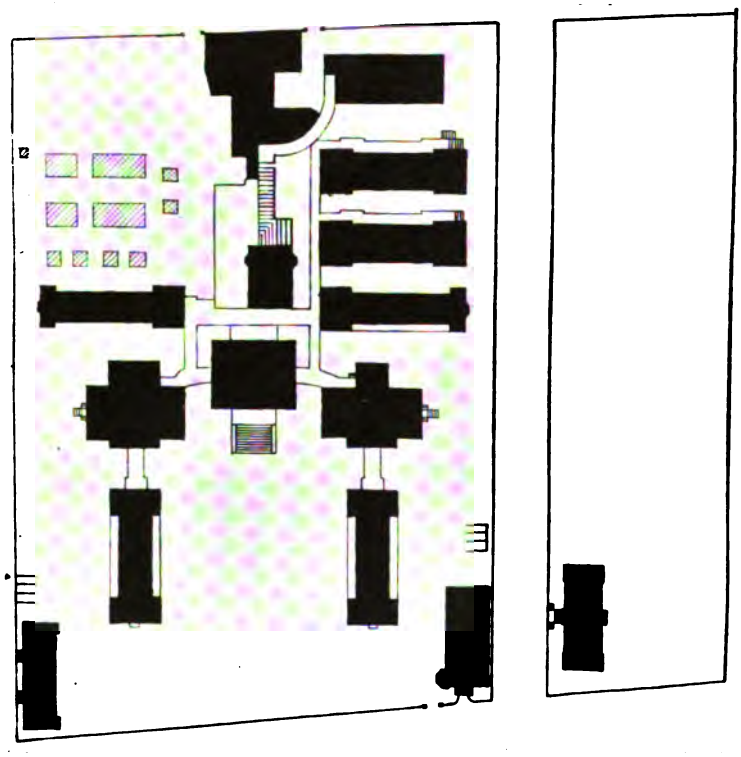
Thus there came within the Hospital territory an additional city square, making a total of three complete squares for the use of the main Hospital, and amounting to 430,963 square feet, or 9.9 acres.

TWO NEW WARDS FOR CONTAGIOUS CASES.

During the five years between 1880 and 1885, the number of contagious cases very largely increased, particularly of diphtheria, scarlet fever and measles. Previous to that time, only occasional cases were admitted, but the demand for admission became so urgent that contagious patients absorbed practically two wards of the Hospital needed for other purposes, and many patients, nurses and other workers became infected. The Trustees finally took a decided stand not to receive such patients, for which the Hospital was not

well adapted or intended, and they declined to take further responsibility for cases of infectious diseases in the city. This action was followed by an appropriation on the part of the City Council of $75,000, with which two new wards were built — Ward A for scarlet fever, and Ward E for diphtheria.

These buildings are practically alike, differing only in a few details. They occupy the space formerly vacant, on the



III. — BLOCK PLAN, 1880-89.

medical side, between Wards T and K, and are parallel to them. They are connected with them and with the rest of the Hospital by two-story corridors, the upper story being open and the lower closed. Each building is 138 feet long by 42 feet wide, and has one story in the centre for 75 feet, but the end portions, for 31 feet each, have two stories. The buildings are of brick, with granite trimmings. The

centre portions have a slated hip roof rising 42 feet from the ground, and the ends have a French "mansard" roof 34 feet from the ground. In specially planning these buildings for contagious cases, it was intended that the wards of each building might accommodate each sex in the open wards and in isolating or private rooms. The five rooms in the upper story, north and south end of each building, were used for the isolation of mixed infectious cases. These buildings were admirably adapted to give excellent service to the limited number of patients within their capacity. Those desiring a more detailed description of these buildings are referred to the Thirty-fourth Annual Report of the Hospital for 1887, pages 29 to 35, inclusive.

NEW OUT-PATIENT DEPARTMENT BUILDING.

During this decade the Hospital capacity had gradually increased, in 1885 to 425 beds, in 1888 to 485 beds, both for free and paying patients, mainly by providing suitably for nurses and for contagious diseases.

In the meantime the out-patient service was rapidly increasing, with no proportionate increase of accommodations. About the year 1889 it became obvious that something must be done to relieve the tension, and that facilities must be afforded for treating patients in a decent manner, which the Medical Staff was unable to do on account of the deficiency of proper rooms for examination and treatment. A single visit of the City Council to the Out-Patient Department quickly convinced the members that money should be granted for the improved treatment of out-patients, and $50,800 was appropriated, with which was constructed the building now known as the "Entrance Office" building. The entrance to the Hospital was transferred from the old "Lodge," near East Concord street, to the building now in use, opposite East Springfield street, which is a more dignified and suitable building for treating the hundreds and thousands of people who daily seek relief at the Hospital. The old "Lodge," previously used by the eight out-patient departments, was now repaired and given up solely to the treatment of surgical out-patients.

CONVALESCENT HOME, 1890.

The other seven out-patient departments found fairly good accommodations on the first and second stories, and the third story is a dormitory for orderlies. The cost of constructing and furnishing this building was $59,600. Those desiring fuller information as to the arrangement of this building are referred to the Twenty-sixth Annual Report for 1889, pages 48 to 50, inclusive (illustrated).

CONVALESCENT HOME.

With the enlargement of the Hospital in nearly every direction, and the increased number of patients, with facilities for better treatment, it became apparent that one of the great deficiencies was a house or home in the country where women could be taken to convalesce; in other words, a branch hospital for the continued treatment of acute cases. For several years the Trustees pressed the City Council in this matter. It was argued that if patients could be removed to country surroundings much earlier than they could be finally discharged, it would supply additional room for acute cases. In the pressure for room, oftentimes patients were discharged sooner than was wise, to make room for those who were seriously ill. Patients, after too early discharge, often relapsed, and returned to the Hospital, requiring a much longer time for recovery than if they had remained in the Hospital. Besides, there was the great advantage of a Convalescent Home with country environment. The Trustees finally addressed a special communication to the City Council, and received an appropriation of $50,000 for purchasing and furnishing a Home for Convalescents. They bought with this the estate of Asaph Churchill, situated on the northern side of 2150 Dorchester avenue, in Dorchester, about one-eighth of a mile from Milton Lower Mills. This land was transferred by the City Council April 19, 1890. It contains 610,500 square feet of land, or fourteen acres. This consisted of a family homestead having twelve rooms, a barn and a bowling alley. These buildings are well situated on fourteen acres of land, somewhat elevated above the surrounding land and street. The garden near the Home is

mostly of annuals, old-fashioned garden flowers, with a few specimen trees and plenty of flowering shrubs. The grounds contain fine oak, maple, beech and pine trees. Quite an extensive portion of the grounds is ploughed and used each year for growing fresh vegetables for the Home itself, and for large quantities of flowers, which are sent to the Main Hospital and to the South Department. Upon the unimproved portion on the eastern extremity of the grounds is pasturage enough for four cows, and a hennery, enough to produce fresh eggs for the patients at the Convalescent Home. Since the occupancy of this land it has enhanced very much in value, and was a good investment for the city, whether it is used as a Convalescent Home or not. Obviously the house was not large enough for a commodious home for patients, but was rearranged and enlarged, including sleeping rooms for servants, a kitchen, laundry, dining-room, a sun-room, covered piazzas, and other facilities conducive to the recovery of health. The house accommodates thirty-four patients and seven persons in the "family."

The Convalescent Home was intended, and has always been used, for women, girls and young boys; and while patients were expected to pay for their board the same as at the Hospital, no private accommodations were allowed, as those who could pay for them could easily pay for board elsewhere.

Good food, pure air, amusement, rest, reasonable occupation, exercise, and in the summer season all the advantages of open-air country life, under the best conditions for renewing health and strength, have been supplied by this Convalescent Home. The land cost $30,000; the cost of reconstruction of the building, grading of grounds, the introduction of a new water supply and sewer system, with furnishing, was $20,700; a total cost of $50,700. A more detailed description of this building will be found in the Twenty-seventh Annual Report of the Hospital for 1890, pages 46 to 48, inclusive.

MEDICAL LIBRARY BUILDING.

The year 1891 will be remembered as the time when the Hospital first had the advantages of the new Library Building, which is practically an annex to the Administration Building of the Hospital. The administrative work was much hampered for want of room. The dining-room for officers had become crowded by the addition of a larger force of House Officers. The appropriation for this object was $17,500, and was the happy termination of a contest between two factions of the City Council, neither of which would give way, but both very willingly granted it to the Hospital for the construction of this building. It is 58 feet long by 42 feet wide, one story high, with a habitable basement, and is built of brick with granite trimmings. On the main floor the principal room is the Medical Library, which is 40 feet long by 25 feet and 6 inches wide. The arched ceiling is 20 feet high at its greatest elevation. The room is lighted by two large bay windows, double glazed with plate glass, and on three sides there are top lights in fourteen windows. Opposite the entrance to the library is a large fireplace with oak panels and cornice 12 feet high by 10 feet wide. The entire walls of the room, except the doors and bay windows, are devoted to book shelves, which now contain 4,000 volumes. The shelves have been several times filled, the older and less useful books being discarded, and distributed to the Boston Medical Library and other libraries. It is intended not to preserve complete files and editions of books, except some of standard and classical reputation, but to be a working library for daily hospital use, and mainly of books recently published. This library has been of the greatest utility, not only to the Visiting Staff, but particularly to the House Staff. It provides suitably for the purposes of a reception room for public functions, for the meetings of the Trustees, the Medical and Surgical Staff, for clinical societies, and for the examination of House Officers, as well as serving as a medical work-room. Adjoining the Medical Library is a clinical record-room, with shelves for about 1,500 volumes of clinical records. Here is placed an

index card catalogue, the number of cards and cross references now amounting to 230,000. The utility of the index card system for clinical records need not be enlarged upon, but in passing it may be said that the very large amount of clinical material here gathered, easily available by the index card catalogue, has made it a mine from which most valuable medical information has been gleaned, and from which many medical monographs and essays have been written. There are two other rooms on the first floor, a private office and work-room for the Superintendent, and a pamphlet room for clerks, and for the storage of pamphlets and miscellaneous stock valuable for reference, not included in the Medical Library or Record Room.

The lower floor is a large, commodious dining-room for officers, in which the House Officers take their meals. There is a fireproof storage-room, with a large safety vault for the preservation of the early records of the institution, and other official documents. There is also a storage room for hospital stationery. A longer description of the Library Building, with illustrations, may be found in the Twenty-seventh Annual Report for 1890, pages 48 to 50, inclusive.

AMBULANCE STATION.

In spite of the many developments already recounted, certain lines had lagged behind in the general advance of the Hospital service previous to the year 1892. The increase in the number of beds to 520, the complication of two wards for infectious diseases, the establishment of the Convalescent Home, together with the increase in the population of Boston, its industries and its more crowded streets, found the Hospital without efficient ambulance service. There were only two ambulances, stationed in an old tumble-down building, in the rear of the grounds on Albany street, which had previously been used as a smallpox hospital. The total inadequacy of the ambulance service to cope with the needs of that part of the Hospital work was obvious. The Trustees, having received during the year an appropriation for the purpose,

erected an entirely new building upon the same spot. It is built of brick, with stone trimmings, with a Dutch style in the front elevation. It is two stories high, and 102 feet long by 60 feet wide. The first floor is divided into two parts, an ambulance room, 52 feet long by 38 feet wide, giving ample space for ten ambulances. Immediately in the rear are stalls for eleven horses. The stalls are arranged

AMBULANCE STATION.

like those of the Fire Department, so that the horses can step quickly to their places in the ambulance. The other half of the floor is divided into carriage, harness and duty rooms, with an inside room and outside platform for washing carriages. The second story, besides a hay-loft, grain-room and storage-room for vehicles out of season, has eight bedrooms, sufficient for twelve men, the stable employees, and for porters and chore men.

AMBULANCE PARADE.—VISIT OF ASSOCIATION OF HOSPITAL SUPERINTENDENTS, SEPTEMBER, 1905.

The stable is finished in hard pine, and the ambulance house, carriage house and stalls have a rock-cement floor. Special pains were taken for the disposal of the manure, and for the ventilation of the whole building, to keep the air as pure as is possible in a stable. These accommodations supplied a long delayed improvement, and they add greatly to the efficiency of the ambulance service. New and improved patterns of ambulances, additional horses and new styles of harnesses and general trappings were installed. Additional ambulance and stable men were employed, who were put into suitable uniforms, and the whole service was enlarged

and reorganized. A fire-alarm gong was installed, that the ambulances might run to a second call in our own district, and to the third call anywhere in the city proper. A signal service was arranged, so that whenever a Hospital ambulance, a police ambulance or other vehicle brought a patient to the front gate, the Administration office and one of the three general divisions of the Hospital would be notified that a patient was coming in, a litter and stretchers would be ready without delay, and the proper surgical house officer signalled for immediate attendance.

In addition to the ambulance service proper, a wagonette was added for taking patients from the Hospital and South

Department to the Convalescent Home, a coupé for sending for surgeons, besides delivery wagons for the transfer of laundry clothing and other minor details of administrative work.

The Ambulance Station now has eleven ambulances and four other vehicles, ten horses and eight drivers. Such has been the improvement of the service in size, efficiency and despatch, that it has probably become the largest connected with any general hospital in the United States, and is believed to have no superior.

NEW BUILDINGS, 1893 TO 1899.

Between the years 1893 and 1899 the Hospital received a third impetus in the addition of new buildings. There were, in 1893, 520 beds at the Hospital proper and 34 additional at the Convalescent Home, making a total of 554. This large increase in patients obviously required more House Officers, more nurses and employees generally, and again the crowded condition of the Hospital became evident. This was particularly conspicuous on account of the complication of two wards for contagious diseases in the midst of the Hospital group of buildings. Intercommunication between these wards and the rest of the Hospital could be controlled only to a limited extent. It was clear that the Hospital must again receive a radical enlargement to meet the demands of the public. A succession of new buildings was carried on continuously in the years above mentioned, the appropriation for which, in the aggregate, amounted to $1,349,000. During these six years, ending 1896, the following buildings were erected: at the Main Hospital, the Pathological Building, Mortuary and Mortuary Chapel, enlarged boiler-room and dynamo house, coal-pocket, alterations and enlargement of the Surgical Operating Building, two surgical wards, W and X, and the new Laundry Building; at the South Department, seven new buildings, including Gate Lodge, Administration Building, Domestic Building, two large ward pavilions, two Nurses' Homes, Mortuary, Laundry, and employees' chambers.

PATHOLOGICAL BUILDING.

Previous to the year 1894 the principal pathological work consisted of autopsies, gross pathology, and routine bacteriological work. For some time this work was done in a small room about 20 feet by 12 feet, in the basement of the Medical Library Building. The impetus given to pathological research, the vast amount of material in the Hospital, and the increase of bacteriological work on account of the new department for infectious diseases, to say nothing of new and original work, made the Pathological Laboratory the greatest necessity in keeping pace with the proper development of the Hospital.

There was at this time no convenient or suitable place for funeral services to he held at the Hospital, and the autopsy-room and its accessories were entirely out of keeping with a properly organized and administered hospital. After a careful study of the subject, and visits to other hospitals having pathological laboratories, it was finally decided to erect a group of buildings in the form of the letter H, at the corner of Albany street and Massachusetts avenue, one building to be two stories for the Pathological Building and the other to be a Mortuary Chapel, and between the two a connecting cloister with rooms for the proper preservation of the bodies of patients who had died.

The most important part of this group is the Pathological Laboratories. These consist of a large building 118 feet long and 42 feet wide, two stories high, containing the following rooms: the post-mortem room, 34 feet long and 28 feet wide, extending through two stories. It is arranged in the form of a small amphitheatre, constructed entirely of metal or marble, and has a seating capacity for seventy-two persons. This permits the witnessing of autopsies by physicians and medical students. Adjoining this is a culture-room, and also a clinical laboratory, with two rooms for special research. The second floor is divided into a biological laboratory, a pathological laboratory, and two research-rooms, with adjoining rooms for cultures and specimens. The basement contains rooms for additional laboratory work, such as micro-

PATHOLOGICAL LABORATORIES.

Mortuary Chapel and South Department on left. Vose House for Nurses on right.

photography and the preparation of materials for pathological and bacteriological work; store-rooms and other accessories.

MORTUARY.

The Mortuary contains five rooms of sizes adapted to the work, the two larger rooms being reserved for the reception of the dead. The walls are lined with glazed brick, and the floors are terrazzo, with marble baseboards. The receptacles for the dead are on the columbarium plan, with light portable racks, arranged in rows four high and five wide, to accommodate twenty bodies. These columbaria or receptacles for the bodies can be kept cold by artificial refrigeration, so that summer or winter bodies are cared for in the best possible way. There are additional rooms for the Medical Examiner, waiting rooms for friends who visit the Mortuary, and another room for the convenience of undertakers in embalming bodies. This part of the building is arranged with a dignified cloister, to connect the Pathological Laboratory and the Mortuary Chapel.

MORTUARY CHAPEL.

The Mortuary Chapel is a small building 48 feet long by 30 feet wide. It has an arched roof, terrazzo floor, marble base and dado, and marble tablets, the architectural features being simple and harmonious with the religious rites of a chapel. It is furnished with suitable cathedral chairs, and has electric chandeliers which are copies of those in the old North Church, given by King George IV. When the purposes of this chapel became better known, it was more frequently used. It is open to any religious denomination, and averages about fifty services a year. On several occasions the chapel has been filled with people, particularly when the deceased patient was a member of an organization.

This building, and all the floors of the principal rooms, including corridors and stairways, are either of marble or terrazzo, and the main stairway is iron and marble. This building, in addition to the ordinary method, is ventilated by the plenum system, a fan driven by a special engine that receives air sixty feet from the ground. It is then heated and

filtered through cloth tubes, and after being diffused through the rooms is aspirated by a fan and sent out through a large shaft in another portion of the building. This method is expensive, but has proved to be excellent, as almost none of the odors prevalent in pathological rooms can be detected. Another important point is that, by filtration of the air, it is kept free from dust and other material deleterious to the work of this department.

MORTUARY CHAPEL.

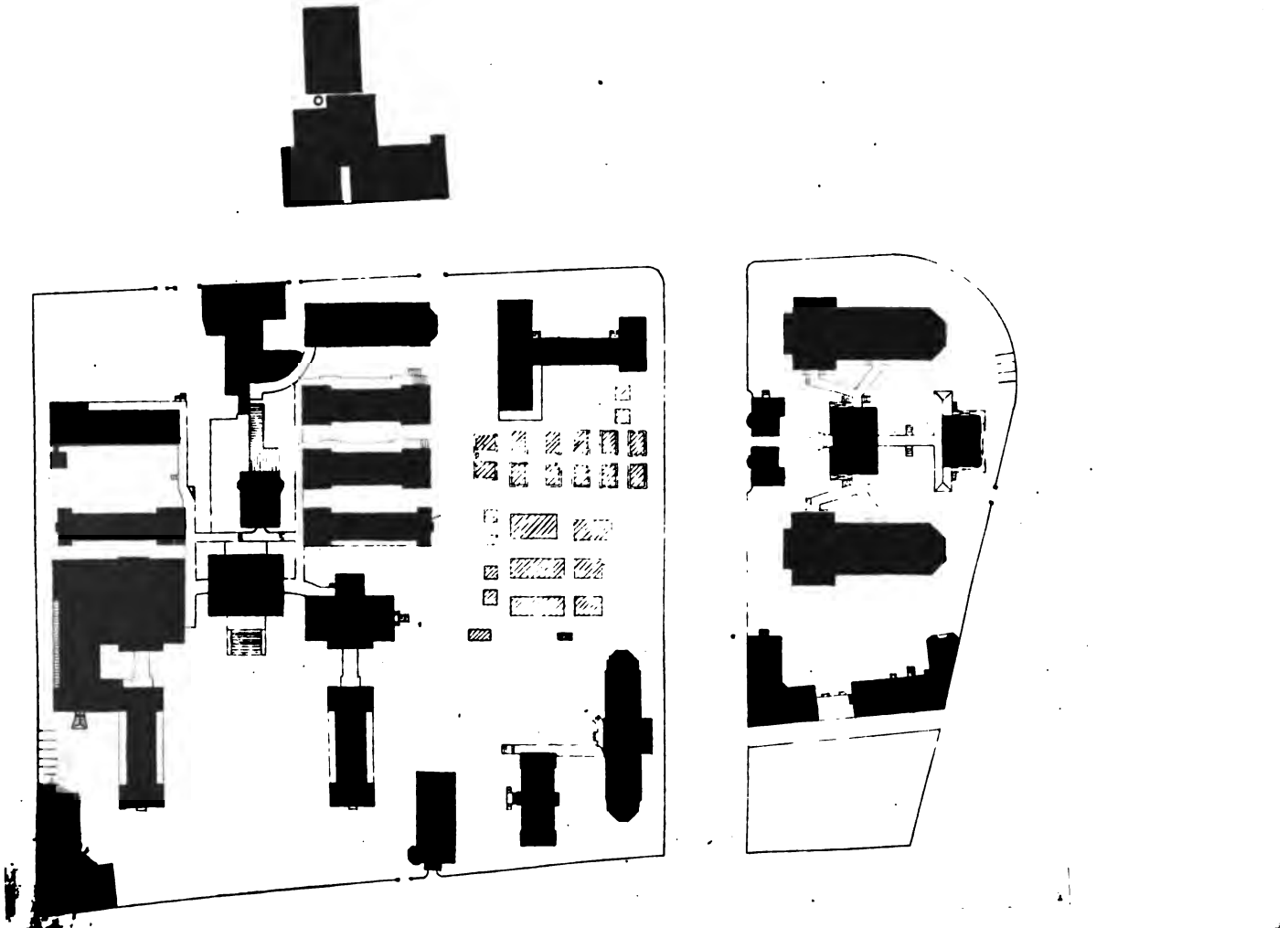
It is unnecessary to say that no modern hospital, especially a municipal hospital as large as the Boston City Hospital, can be considered as having proper facilities for scientific work without well-equipped laboratories. The great extent of the work done here, its kind, the persons engaged in it, and the scientific discoveries made, will be given elsewhere in this volume, and it is scarcely necessary to enlarge upon this point, however gratifying it may be as a matter of pride.

Between January 2, 1892, and June 19, 1899, there was under constant progress a radical and marked enlargement of the Hospital buildings. The expenditure upon these new buildings was continuous, and the bookkeeping was done at the Auditor's office, City Hall, and not as a part of the annual disbursements of the Hospital. Loans, transfers and payments on account of these buildings were there recorded under the caption of "New Buildings," according to the orders passed by the City Council.

During the seven years in which these buildings were being reconstructed the following were added to the Hospital group:

The South Department, consisting of the Gate Lodge, Administration Building, Domestic Building, East Pavilion, West Pavilion, Nurses' Homes East and West, Mortuary and Mortuary Chapel, and Laundry Building. At the Main Hospital, an Ambulance Station, Boiler and Dynamo Houses, Pathological Laboratories, Mortuary and Mortuary Chapel, Surgical Operating Building, and Wards N and O, reconstructed; Wards W and X, ambulance shed and grading, coal-pocket adjoining boiler-house, building walls and roadways about the Main Hospital, draining and surfacing the grounds, installing refrigerating plant, and a new Laundry building.

Besides the foregoing, there were also received during the above-mentioned seven years appropriations for the following improvements: For surgical elevator, $4,000; for fire hydrants on the grounds and inside fire stand-pipes, $4,500; furnishing new wards and buildings, $24,000; electric light plant (in part), $10,000; Hospital Buildings Improvements, $20,000. There was received on account of the construction of "New Buildings" in the time and for the objects specified, the sum of $1,278,500. From these appropriations and loans mentioned, the new Ambulance Station and the Pathological group were erected, which have already been described.



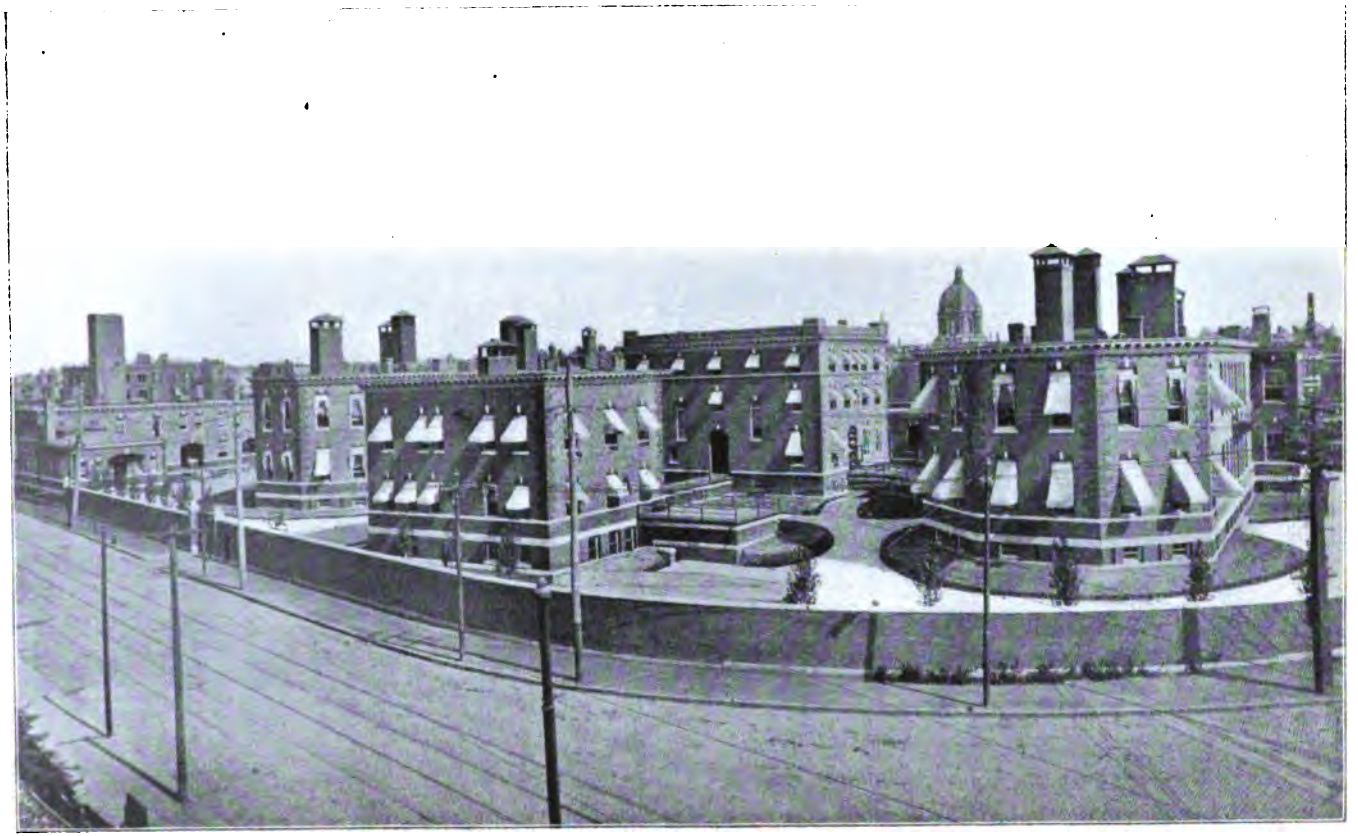
IV.—BLOCK PLAN, 1880-1906.

SOUTH DEPARTMENT.

The largest and most important addition from the appropriation for "New Buildings" was the creation and erection of the South Department. For some years previous to 1892–1895, Ward A for scarlet fever and Ward E for diphtheria had been over-crowded. Cases with both diseases were rejected in large numbers. Antitoxin was as yet unknown. The mortality from diphtheria was very large, in some years exceeding 50 per cent. of cases admitted. It therefore became the duty of the city to provide a suitable hospital for these and other infectious diseases — smallpox excepted. The grounds of the Hospital proper were already crowded with buildings, there being a total of 520 beds.

After much agitation and constant pursuit of the matter, and with the cordial consent of the Hon. Nathan Matthews, at that time Mayor, it was decided that the city greenhouses, located on land already owned by the city, adjoining the Hospital, bounded by Massachusetts avenue, Albany street, Northampton street, and the estates of Robert Treat Paine, should be transferred to some place in the country where land was less valuable, and that the land be transferred to the Trustees of the Boston City Hospital for a special department adapted to the care and treatment of infectious diseases. It is not easy, with the facts at our present disposal, to state the exact sum that was expended in the construction of each of the buildings of this department, except by a laborious and detailed investigation at the Auditor's office. The total amount was not far from $525,000, not including $20,000 for furnishings.

The department consists of a group of seven buildings situated on Massachusetts avenue, as above recited. The buildings are exteriorly of brick, with marble trimmings. The general style of the architecture is that known as the Federal period, which prevailed in the United States from 1800 to 1820. The two large pavilions are connected with the Administration Building by a lower floor, covered corridor, for use in all weathers, and an open-air, upper, main story corridor



SOUTH DEPARTMENT. REAR VIEW.

ADMINISTRATION BUILDING.

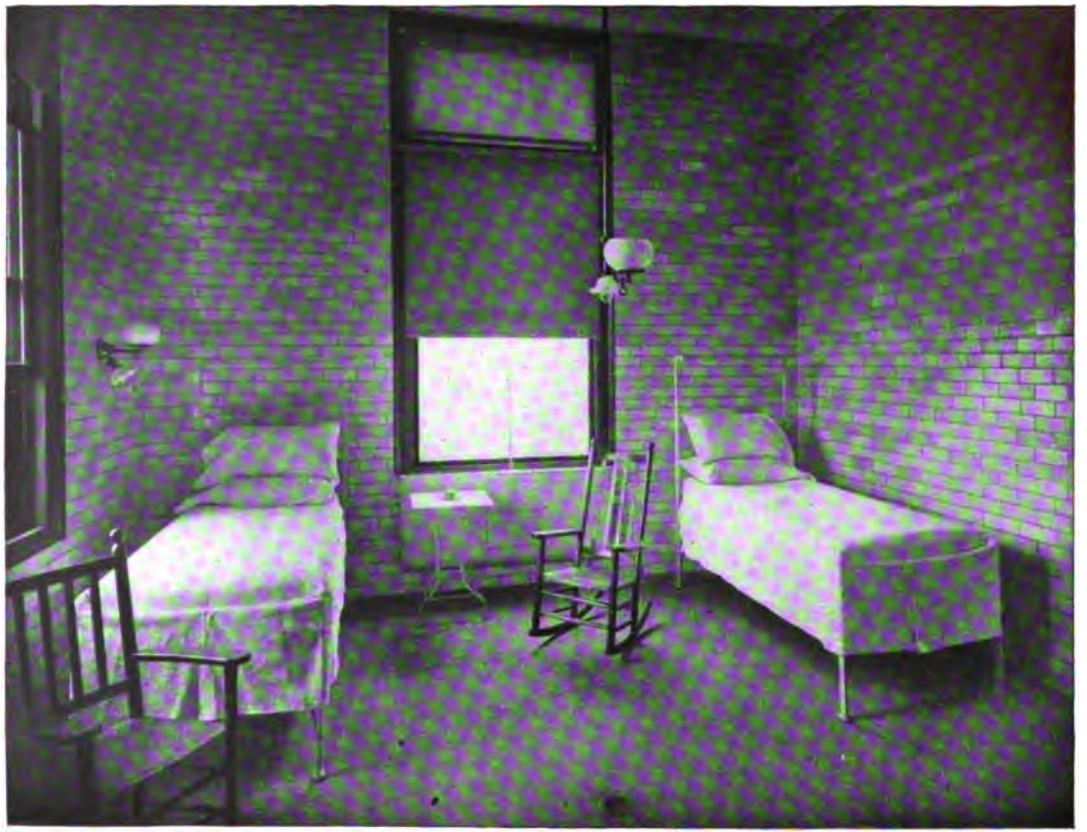
The Administration Building is three stories high, with a habitable basement. The main story provides for the general administration of the relations between the Hospital and the public, and also for officers and assistants and executive offices. The second story is divided into two parts, one for the Resident Physician and his family, the second part for the Matron and women officers, each by separate stairways. The third story has bedrooms for the Assistant Resident Physicians, House Officers and other male officers.

PAVILIONS FOR PATIENTS.

The site being restricted, made it necessary that the buildings devoted to patients should be arranged with as little communication as possible, and yet be compact. In the planning of the pavilions the dictum of the English Government Board of Health was followed that no building occupied by patients with infectious diseases should be within forty feet of a public passage. Accordingly, no building of this department occupied as a ward is within that distance of a public sidewalk. There are two pavilions, one for diphtheria and one for scarlet fever, each 160 feet long, divided by open-air, transverse corridors, open all the year, so that each floor can be divided into four complete isolating wards or groups of wards. This gives a classification of sixteen wards, not counting the fact that the semi-octagonal ward at the south end of each pavilion has isolating rooms.

The transverse, open-air corridors are eight feet wide, the walls of glazed brick, with terrazzo floors, suitably drained for all kinds of weather. The open-air loggia, at the north end of the wards, gave opportunity for architectural iron grille work, and has been much admired. The pavilions are arranged so that no person can go from the first to the second story without passing out doors, the stairways being separate for each story, as are also the dumb waiters. The heating and ventilation will be described elsewhere.

No pains was spared that the construction of these



THE BOSTON CITY HOSPITAL. — SOUTH DEPARTMENT.
Probation or Isolating Ward.

buildings should be of the best. They are of slow-burning construction, with a large amount of glazed brick walls and terrazzo floors.

The two pavilions for patients are practically alike. Each floor is divided into wards large enough to accommodate from four to eight beds. There is a large semi-octagonal ward at the south end of each of the four floors, making them practically solariums. The north end is devoted to observation wards, where patients are first admitted if the diagnosis of the disease is not thoroughly established. Sixteen patients can be treated under these conditions. These rooms have their own duty rooms, baths and toilets. The walls of these observation wards are of glazed brick, with terrazzo floors, and can be flushed by a water hose.

The normal capacity of these wards is 260, upon the calculation that one-third are adults and two-thirds children. As a matter of fact, since these buildings have been occupied, there have been as many as 335 patients, mostly children, in the Hospital upon one day.

GATE LODGE.

The Gate Lodge is a one-storied building of brick, with marble trimmings, and consists of two parts; one for the offices and the other for dormitories for orderlies. In the centre is an archway with ornamental wrought-iron gates for the admission of ambulances and carriages. The offices are for the control of all persons entering and leaving the department. There are waiting rooms for friends not permitted to visit patients with infectious diseases, examining rooms for applicants, and the usual accessories of such a building. Architecturally this building is the "gem" of the group.

DOMESTIC BUILDING.

The Domestic Building is three stories high. The lower floor contains the kitchen and cool rooms, the bakery, housekeeper's service and steward's storeroom. The main floor contains the pharmacy of the department, the nurses'

school-room, the serving-room, sewing-room, matron's stores and employees' dining-room. The third floor contains bedrooms for upper domestics.

LAUNDRY BUILDING.

The Laundry Building, on the main floor, furnishes two laundries, one for the ward work and a second for "family laundry," separate and distinct, for officers and employees, to guard against infection. Both were supplied with the best laundry apparatus for institution purposes existing at the time of their installment.

The upper story is divided into two distinct parts by separate stairways — one a dormitory for male help, and the other for female help. The lower floor has engine-room, carpenter shop, stores and two disinfecting rooms, containing a very large disinfector fifteen feet long and seven feet in diameter, each end opening into two different rooms, one for infected clothing and bedding, the other for sterile goods after going through the sterilizer. A rubbish destructor was placed here, where all refuse coming from the wards, including broken food, is completely destroyed.

NURSES' HOMES, EAST AND WEST.

There are also two houses for nurses, which are in an L-shaped building, so arranged that it is divided into two complete buildings, entered at each extreme end, adjoining but isolated from each other, by a stairway, so arranged that each floor is separate from the other floors. By this arrangement, six groups of nurses are able to occupy the building without being obliged to come intimately in contact with each other.

It was originally intended to construct a third pavilion for measles upon the north, marked "D" upon the "plans of the grounds and principal floor," but the expenditure upon the whole Hospital group was very large and the matter was deferred. This is a pressing necessity, which the Mayor and the City Council are beginning to understand, and the prospects now seem brighter for an additional building for this fine group.

It is gratifying that the reputation of this group of build-

ings has extended all over this country. It has been visited by large numbers of architects, physicians, and official bodies even from a distance, who are contemplating the construction of a hospital for infectious diseases.

The increased advantages, both in the sanitary condition of these buildings, combined with the use of antitoxin, has reduced the mortality which previously existed in the Main Hospital, in Wards A and E, from 54 per cent. to 8 per cent., in the new South Department. The South Department was opened on August 31, 1895, by the transfer of eleven patients from Wards A and E. The Trustees decided that this Department should be under the general charge of the Superintendent of the Hospital, like all the other departments; and that the nurses should be assigned for periods of study and practice of from four to six months. The Trustees very wisely decided that instead of having a Visiting Staff they would secure the services of a Resident Physician who was an expert in infectious diseases, with two or more assistants, who should have the entire care and responsibility of the professional treatment of patients, together with an assignment of House Staff and Clinical Clerks.

The Department is entirely surrounded by a high brick wall with marble coping. The grounds of the South Department require little explanation. They are nearly three acres in extent. There are two entrances, one in the arch driveway of the gate lodge, for ambulances and carriages bringing in and carrying out patients, and a gate in the rear, for the admission of kitchen and subsistence stores. There is an asphalt driveway completely encircling the buildings which is much used as an exercising ground for nurses and others when taking brief open-air outing. There is a fine growth of Lombardy poplar trees, which are picturesque in their appearance and do not cast much shadow upon any of the buildings. The land was transferred to the Trustees April 18, 1891.

In considering the maintenance of the South Department, it was decided that it should be a distinct department of the Hospital; that its accounts and bookkeeping should be kept

THE BOSTON CITY HOSPITAL.—SOUTH DEPARTMENT.
Transverse Front View.

separate; that proper charge should be made for heating, lighting and ambulance service, and that an intercharge account should be kept for all articles or supplies transferred from either the main department to the South Department, or otherwise.

Among the other new buildings erected during this period of enlargement were the boiler-house, coal-pocket and refrigerating plant, which will be considered under heating and ventilation.

As has been before stated, the growth of the Hospital had expanded in such a manner that the enlargement had to be equalized in various ways. The kitchen, although once previously extended, was again increased twice in size. The boiler plant was transferred from the old boiler-house on the Main Hospital side to the Hospital wharf side. The laundry had outgrown its capacity, and at this point was trebled in its floor capacity. An expenditure of $13,000 was made for a suitable brick wall with marble coping, eight feet high, surrounding the entire Main Hospital grounds, excepting that portion in front on Harrison avenue. That part of the grounds near the present Pathological Building, which for many years had been practically a dumping ground, was graded, loamed, and grass seed was sown. The roads on the medical side, together with suitable catch-basins, and the planting of Lombardy poplar trees, were among the improvements during this period.

NEW SURGICAL BUILDING.

One of the principal difficulties experienced at this time was the limitations for good surgical work, including both surgical operations and the accident department. The old surgical amphitheatre, with all its adjoining rooms, was made of wood, largely of beaded sheathing, and with wooden floors. Antiseptic surgery had come, but with all its improvements good results were not as often obtained as might have been with better conditions. These wooden rooms were practically saturated with the absorptions of twenty years' work. After an appropriation had been secured, new

plans were made, and the building radically enlarged and entirely reconstructed upon new and improved designs, all bearing upon the question of antiseptic surgery.

Looking upon the principal floor plans of 1905 (see folder), the old surgical building, including the operating and all other rooms on the first floor, were stripped interiorly. The building was enlarged on the line opposite the Administration Building, and also on the wing running north to East Concord street, leaving only a narrow passage for ambulances, and thence north to a line somewhat beyond old Pavilion I, Wards B, C and D. The location of the operating amphitheatre remained the same, and was the pivotal point of all the work of the surgical wards. Previously square, it was now made round, which has since proved to be not desirable as a lecture room, as there is more or less echo under certain conditions. The floor space for general operations was larger, and the seating capacity was increased to 174. The internal construction was so changed that, excepting the wooden seats for medical students, everything was either marble, metal or glass. The walls were of hard cement plaster. All the details cannot be here enumerated, but the space about the operating table was increased. There was a large *exedra* with seating capacity for twenty of the Visiting Staff, wide enough to permit passing by each other without stepping into the operating table floor space. The room is lighted by skylights, facing the northeast, but this method has not proved altogether successful, because they give too much light. Upon the right of the amphitheatre are five rooms, which serve as ether rooms, or rooms where patients may be retained until they are wanted to be shown at the clinics. Near the amphitheatre is a retiring room for the surgeons.

The building is traversed by three long corridors, one from the Administration Building to the farther point next to East Concord street, running the entire length of the building, 180 feet, upon either side of which are operating rooms, recovery rooms, etc. Also the cross corridor opposite the operating amphitheatre to Ward B was preserved.

At each side of the operating amphitheatre, under the

incline of seats, are placed eight set bowls, for washing and sterilizing preparatory to surgical operations. Directly in the rear of the operating amphitheatre is the entrance for students, who gain access to the amphitheatre seats by stairways in the rear.

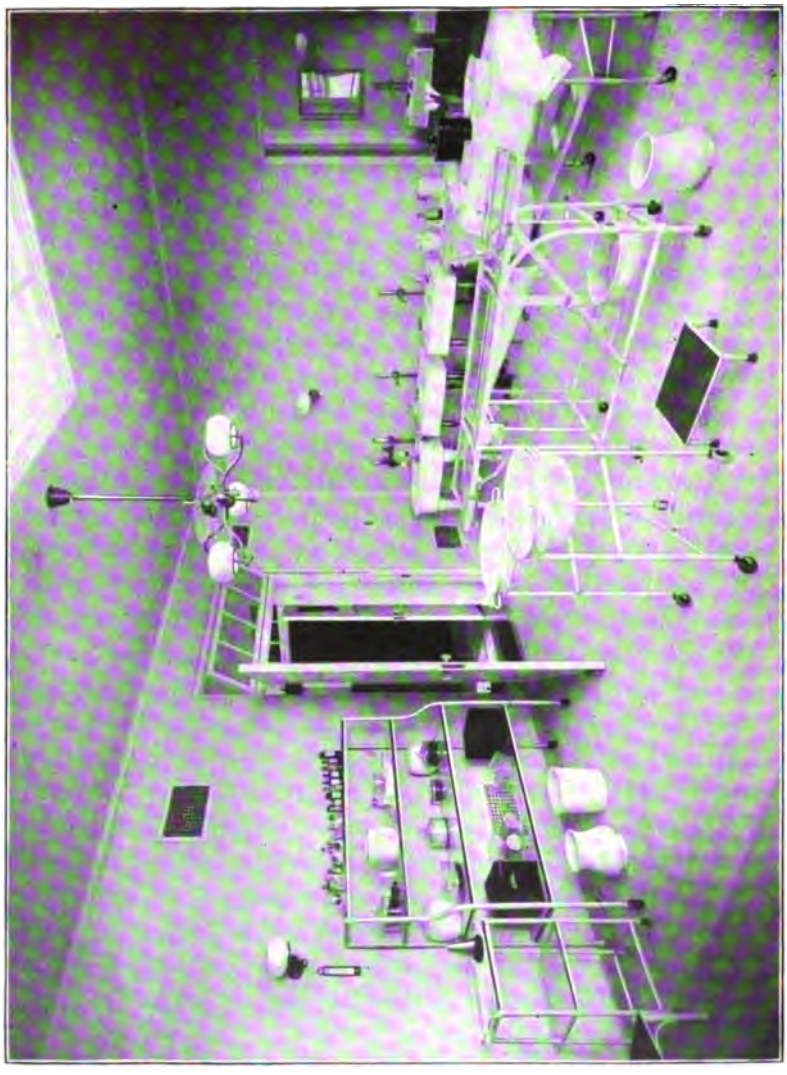
Upon the north side of the Hospital are five operating rooms for ordinary, every-day surgical operations. One each is generally for the use of the First, Second and Third Surgical Services. Special operating rooms near the Amphitheatre are used for completion of operations, after being performed on public operating days. There is a fifth operating room which is reserved for either service, while a regular operating room is being cleansed or sterilized. At the extreme north end of the East Concord street side are two large recovery rooms for patients, with a service room between. This is a valuable and beneficent adjunct, both to the patients after surgical operations, and also to the ward patients. One is for men and the other for women. Patients immediately following operations are taken to these recovery rooms, having the attendance of the recovery room nurse, so that they may "come out" of ether and be more comfortable before they are returned to their regular ward bed. On the south side are the sterilizing rooms, with a large and expensive outfit of apparatus for sterilizing. There are four sterilizers — a utensil sterilizer, a water still with three tanks, and an autoclave for keeping water flasks at 110° F.

The room for preparation of surgical dressings is the headquarters of the Training School Nurses engaged in surgical work, and contains all the things necessary for the preparation and preservation of sterile surgical dressings.

The adjoining instrument room contains ten iron and glass cases with six glass shelves each, for surgical instruments.

In the centre of this building are three rooms, one a consulting room for the Visiting Surgeons, one for the Senior House Officers, and one for the Junior House Officers. There are three other rooms on the northwest corner. One is used as the office for the Assistant Superintendent and the other

two for teaching purposes. The heating and ventilating arrangement of this whole floor, which comprises a total of 3,800 square feet, is complicated but efficient, and will be



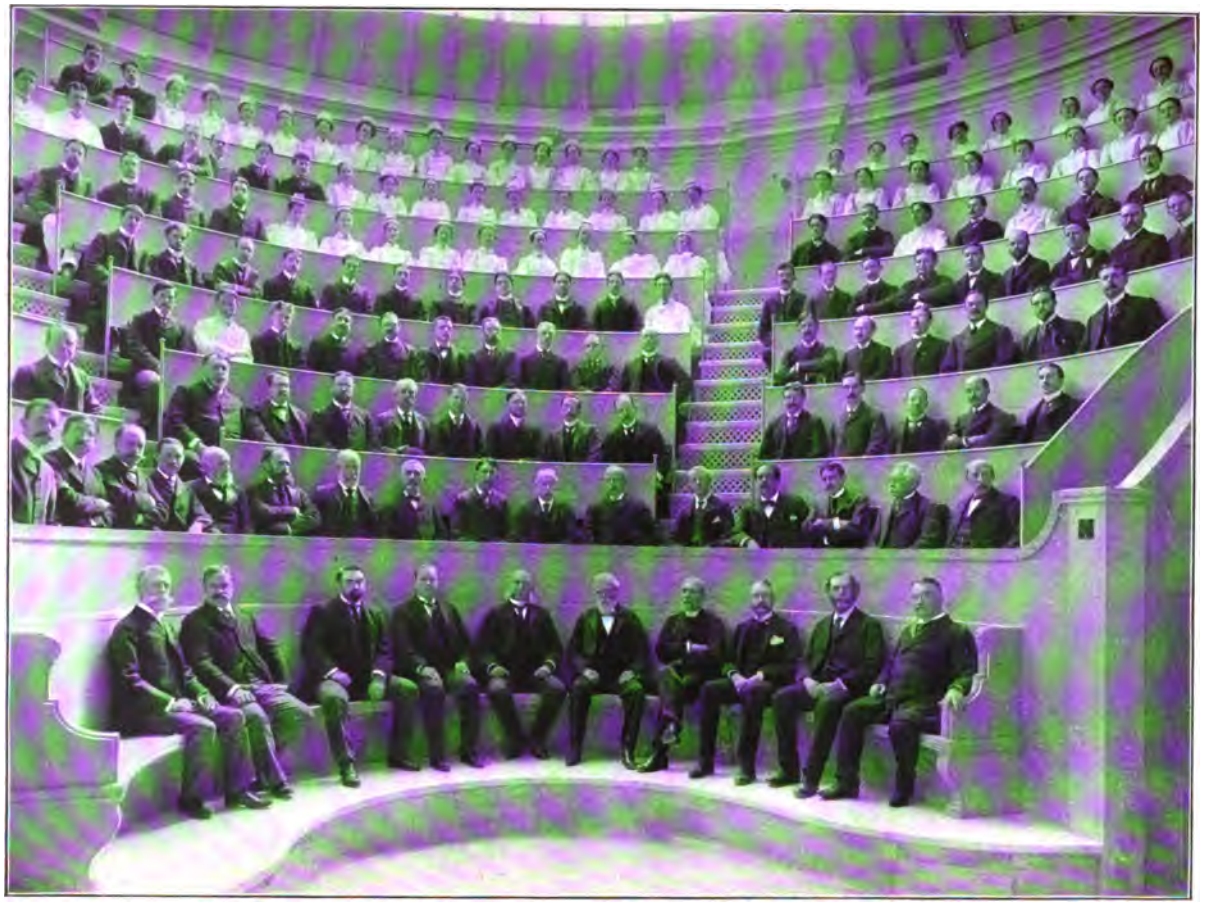
ONE OF EIGHT SMALL OPERATING ROOMS.

described under the section of this paper on heating and ventilating.

The second and third floors of this complex building are divided into two parts, one for patients and the other as dor-

mitories for house officers. The second story in the main building is for private room, paying surgical patients either for men or women. At the time of the reconstruction of this building, the old plastering was all removed, wooden floors and joists removed, and in their place iron beams and fireproof construction was installed. A fireplace was constructed in each private room and the rooms were entirely refurnished. A new service-room was added, giving all the modern requirements of a thoroughly equipped duty-room for nurses. New water-closets for each sex, bath-rooms, toilet-rooms and other accessories, were also provided. The third story, Ward O, was completed the same as the second story, Ward N, in construction and equipment. This story is for surgical children, and contains eleven beds for boys. There is also another nearly as large ward of eight beds for girls. There are seven rooms, some with one, others with two beds, for lower-priced paying, private room patients. The second and third stories of the north portion of the Concord-street wing are used as apartments for House Officers. Entrance is by separate stairway, and exclusively for that part of the building. The second story contains seven rooms and the third story nine rooms. There is a sitting-room and a plentiful supply of bath and toilet-rooms, making comfortable quarters for the House Staff. The total accommodations are for twenty men.

That portion of the Concord-street wing on the lower floor is given up entirely to the accident service. The ambulance entrance is from the north door, the ground of the main level being graded down three and one-half feet, so that the ambulance is on a level with the lower floor. Patients are received under a *porte-cochère*, and for their service there are four accident-rooms equipped with all the apparatus and fittings necessary for the first care of any and all sorts of accident cases. At the eastern portion of this floor are two casualty wards, one of eight beds for men, and the other, five beds for women, with a nurses' service-room between. This has been found to be an extremely useful and beneficent part of the first treatment of patients. In former years all patients were treated in only one accident-



SURGICAL AMPHITHEATRE. TRUSTEES, MEDICAL STAFF, HOUSE STAFF AND NURSES.

room, different sexes being separated merely by screens, and after first treatment were taken at any time of day and night directly to the wards. At present, after treatment in the accident-rooms, patients, during both day and night hours, are taken to these casualty wards and remain there until their condition is suitable to allow transfer to the open ward. They also serve as a "clearing-house" for a better assignment of cases to proper wards, saving subsequent transfers. Patients in the general wards are relieved from the disturbances incident to the introduction of all sorts of patients in uncomfortable physical conditions, often at the dead of night.

There is upon this floor and near the accident door the surgical supervisor's office, where specially trained orderlies give attendance to patients who are received and patients who are being discharged, ambulance cases, and the general miscellaneous work incident to the surgical division of a large general hospital. There are two waiting-rooms, a large splint-room, and a workshop where the House Staff may temporize wooden, metal and other splints and apparatus. On the south side of this building is a large room, not well lighted, and with windows only on one side. It has been the ultimate intention that this room should be fitted up as a hospital museum, where might be placed a large number of antique and instructive articles, collected during the life of the Hospital, some of them historic, but abandoned for new methods, instruments and surgical paraphernalia generally. This floor is provided with five toilet-rooms and baths, including baths for heat stroke cases in summer. The main portion of the building under the surgical amphitheatre is given up to elevator machinery, fans for the ventilating system and other similar appurtenances, as this space is not suitable for habitable purposes. There is also a room for the teaching of cooking, and a class-room for the Training School.

WARDS W AND X.

During this time, 1894 to 1896, notwithstanding the previous great improvements and enlargements, there was a great demand for an increased number of beds for surgical

patients. With an appropriation for this addition, a new building was erected on the ground near the corner of East Concord street and Albany street. The building is two stories high, and the first floor is on a level with the main floors of the Hospital. Exteriorly the construction of this building is the same Federal style as the South Department, the building being of brick, with marble trimmings. In the construction of Ward T, in 1876, the group of ward service-rooms was located at the south end of the ward, on account of the convenience for administration and its relations to the corridors. It was found that this deprived the open ward of much of the sunlight, which is so desirable. In connecting the new building, which was afterwards named Ward W and Ward X, it was decided to give the south end of the ward the free sweep of the sun during the day, and to construct an outside corridor going the length of the south end and east end, and place the service-rooms at the northeast end of the wards. This has proved a desirable arrangement; and while it makes the administration a little more difficult, it gives the patients the sun from early morning till late afternoon, and they are practically the best wards in the Hospital, from this hygienic point. Practically the first and second stories are the same. The first story, Ward W, is for surgical men, and the second story, Ward X, for surgical women. Besides the open wards, one of twenty-seven and the other of twenty-eight beds, there are also three private rooms, together with service-rooms, head nurse's office, clothes-room, linen-room, bath-rooms, lavatories, and the usual ward accessories. A departure was made in this building by placing the water-closets in a tower at the extreme north end of the building, so that there is a cross ventilation between the ward building and water-closet tower, to eliminate possible vitiation of the ward air. The interior of the tower, in which are situated slop hoppers, baths, water-closets, urinals, etc., is glazed brick with terrazzo floors, and all the plumbing is of the newest and most improved patterns. In the older wards of the Hospital there were generally seven windows on each side of the ward,

and two beds to each window. In these two new wards there are fourteen windows on each side, and one bed between each window. There are also transoms over each window, which aid greatly in flushing the ward with pure air, and in such a way as not to create a draught on the patients. While the heating and ventilating will be mentioned elsewhere, attention is called to the fact that the ventilation is in two towers in the centre of each ward, which enables each ward to have four fireplaces; and during cold weather, when these fireplaces are in use, the flues are heated, and therefore aid in removing the impure air of the wards. As I have elsewhere said, from a hospital superintendent's point of view, they are, with slight exceptions, the best constructed, and furnish the best and most hygienic conditions of any building in the entire group.

BUILDING IMPROVEMENTS.

During this period of "New Buildings," between January, 1893, and June, 1899, many minor, and yet very useful, additions were made to complete the improvements.

ELEVATORS.

Amongst them may be mentioned the following: Passenger elevators were installed in the Medical and the new Surgical Building, and although the elevator wells were constructed in 1876, they remained vacant for twenty years. They added greatly to the convenience of transportation, as the two medical buildings and the two surgical buildings were connected by means of covered corridors, or iron bridges, which facilitated the work and reduced the strain upon the hospital workers.

FIRE SERVICE.

Previous to 1892 the Hospital depended largely upon portable fire extinguishers, which, while useful in themselves for incipient fires, were not to be depended upon in case of danger from larger conflagrations. There are now installed throughout the entire buildings one hundred and one interior water stand-pipes with hose and nozzle, so located and of suitable

lengths as to reach, with a 2-inch stream, from a 75-pound pressure water service, every room in the Hospital, whether for ward or other purposes. There are also ten hydrants conveniently located upon the grounds for the use of the Fire Department engines. In addition, eighty-five hand fire-extinguishers are located in many places, so that the premises are well provided with means for extinguishing incipient fires. Our dependence, however, has always been placed upon the near-by City Fire Department engines. All the departments have a special fire-alarm box.

FIRE ESCAPES.

In 1895 new iron fire escapes were placed upon all the ward buildings, both old and new. No building now has less than two exits, by stairways or fire escapes, and many of them have three exits. Fire escapes were also placed on the attic of the Administration Building, and upon many other buildings where needed, but not used by patients. All the buildings constructed during the last eighteen years have not less than two stairways, built of all iron or of iron and marble, or slate.

During these years a new boiler-house and new dynamo-house were built, including electric light plant and a coal-pocket, which will be treated in the section on heating and ventilation.

GARBAGE DESTRUCTORS.

In this period garbage destructors were installed in the Main Hospital for the absolute destruction of surgical dressings, food returned uneaten by patients, newspapers, bouquets, fruit skins, etc., etc. In the Main Hospital about twenty-five barrels of such refuse is destroyed daily. A second smaller garbage destructor was installed in the Pathological Laboratory for the destruction of offensive and possibly infectious pathological material. A third destructor was installed in the boiler-house, and is a part of the permanent improvement to be relied upon in the destruction of infected bedding and larger things.

STORAGE SHED.

In the course of thirty-five years many things had accumulated in the basement under the wards occupied by patients. The large outfit of bedsteads and materials which were necessary for the tent service when desired in the summer, second-hand furnishings occasionally required, but cumbersome in the wards, mattresses, wooden furniture, like bureaus, chairs and wardrobes, wanted at certain times and to be drawn upon for exigencies, — all these were material improper to be kept under wards occupied by patients. The storage-house was built with two stories and divided into five divisions. In this building all the above-mentioned miscellaneous furnishings were placed so as to be easily available.

HOSPITAL KITCHEN EXTENSIONS.

The rapid increase in the number of patients and Hospital population generally, between 1890 and the last part of that decade, practically required enlargements of the heating and power plant, the laundry, quarters for house officers, house for nurses, number and size of dining-rooms, as well as chambers for nearly all classes of employees. The Hospital kitchen had remained practically the same for more than twenty-five years, although the capacity of the Hospital (its officers, nurses and employees generally) had more than doubled. The work was previously done under cramped and inconvenient conditions. The Trustees, fortunately, were able, in 1900 and 1901, to make this improvement, which was made possible by the gift of the executors of the estate of Thomas T. Wyman, who were Mr. Arthur F. Estabrook and Mr. C. Herbert Watson.

The entire ground between the long central Hospital corridor and the long corridor leading to Wards W and X was taken for this purpose. The old kitchen, which formally filled a part of this space, was torn down. The enlarged kitchen is 48 by 44 feet, and is lighted and aired from a large skylight made after an improved greenhouse style.

The walls are brick, enamelled white. The floor is slate. The culinary outfit for kitchen purposes was entirely renewed. A new bakery was also constructed, 32 by 20 feet, and additional bakers, ovens, and all improvements that could be desired, were installed. There is a special ice-cream room and special ice-house. A dish-washing pantry was added, so that all the food conveyors going from the kitchen to the wards are returned to the pantry, and are not again used in the kitchen until after they are cleaned. Five additional refrigerators were constructed, kept cool by the ammonia process machine in the Mortuary Building. It is not necessary here to give further details, but it is probably as complete a kitchen and culinary department, with as many feet of floor space, as can be found in any general hospital located in a city. A fuller description of this will be found in the Thirty-seventh Annual Report for 1901, page 60.

NEW LAUNDRY BUILDING.

In the year 1896, after the boiler-house had been transferred from the rear of the Main Hospital to the new houses on the wharf side, the autopsy-room to the Pathological Laboratory, and the carpenter shop to another locality, it was possible to carry out the previous intention of tearing down the antiquated boiler-house, and in its place to build a new Laundry Building. This was constructed during the years 1897 and 1898. It was built of brick, with marble trimmings, like the other new buildings of this decade, and is four stories high. The first, second and third stories were designed for laundry purposes, and the fourth story made a dormitory for laundry women. The whole of the lower floor was utilized as a laundry wash-room, with walls of glazed brick and the floor of cement. The motor power for this building is from an "Ideal" 36 horse-power engine. The second story is divided into a room for two large mangles, two drying-rooms and a distributing-room. The third floor is mainly intended for a family wash-room and laundry, so that the officers' and family laundering is kept entirely separate from the ward work. There are two iron stairways, one

at each end of this building, which is a slow-burning construction. In addition to the usual drying-rooms, there are toilet-rooms on each story, and an elevator going from the lower floor to the roof, upon which is a laundry yard, principally for the drying of blankets and flannels.

The laundry machinery of this new building is a superior model feature. On the lower floor there are seven washing machines, five wringers, two "shaking-out" machines, and also a sufficient number of set porcelain tubs. Most of the second floor is occupied by two Hagen six-roll mangles, each of which will iron 10,000 pieces of "flat work" a day, and each requires the full work of seven women. The family laundry has two rotary washers like those on the lower floor, a wringer, a starching machine, a clothes press and porcelain set tubs. There are also on this floor twelve body-ironers, which do most of the personal washing for officers, nurses and employees. The laundry is thoroughly well ventilated, first by means of a rotary aspirating fan at the top of a ventilating shaft, with a special rotary fan over each Hagen mangle ironer, to obviate, during the summer, the great heat that is given off. Notwithstanding the large increase, not only in patients, but officers, nurses and employees, the outfit can promptly take care of all the laundry work of the institution, which amounts to between 90,000 and 100,000 pieces a week.

VOSE HOUSE FOR NURSES.

The section on Hospital Grounds explains that all the land bounded by East Springfield street, Harrison avenue, Massachusetts avenue and Albany street was taken by right of eminent domain, on July 10, 1891, and July 19, 1901. Later, at various dates, the eleven houses on Massachusetts avenue, corner of Harrison avenue, were also acquired by right of eminent domain, costing the city $101,000.

The accommodations at the Nurses' Home were excellent, but quite insufficient, when the number of nurses had increased from about 68 to 150. Most fortunately, at this time, through the thoughtful and generous kindness of

VOSE HOUSE FOR NURSES. MEDICAL WARDS.

Messrs. George White and Francis C. Welch, executors of the will of the late Ann White Vose, the Hospital received as a residuary legacy the sum of $100,000 for the specific purpose of erecting a new building for the nurses, and appropriately called "The Vose House." After the buildings on Massachusetts avenue, at the corner of Harrison avenue, had been razed, work was begun November 23, 1897. The building was brick, with marble trimmings, and harmonized with the general character of the buildings of the South Department. It is four stories high, with a lower floor above ground, except a portion of one wing at the north end. The building is 182 feet long, and in its central portion 54 feet wide, and through the wings 39 feet.

The lower floor is devoted to domestic purposes. In the central portion, upon the west side, is a large kitchen 32 feet long by 16 feet wide, properly equipped with a modern hotel range, pastry oven, steam, soup and vegetable kettles. A large refrigerator, 12 feet by 8 feet, with three compartments, opens from the kitchen, between it and the central corridor, and on the opposite side a pastry-room of the same size for general kitchen stores. In the southerly wing is a large dining-room, with a seating capacity for ninety-eight nurses. Between this dining-room and the kitchen is a pantry and serving-room, with china-closets and all the modern equipments for carving and keeping food warm. The dining-room is irregularly shaped, but its southern portion, being semi-octagonal, gives plenty of light and sun. In the extreme northerly portion, a large semi-octagonal room serves as a sewing-room for the personal work of nurses. There is also a tea kitchen, where nurses may serve tea and, if they please, do light cooking for themselves outside the regular meal hours. There is also a parcel-room, a bicycle-room, a room for soiled linen and toilet-rooms. The corridors of this story are laid with Welsh terra-cotta tiles, the kitchen and pantry with slate tiles, the dining-room with terrazzo and all other floors with granolithic.

On the first or principal story, the central portion serves as a large reception hall, 50 feet long by 32 feet wide and 16 feet high. That portion of the hall (under the large

NURSES' COLONY.

Vose House. Connecting Corridor. First "Nurses' Home."

porch on the Massachusetts avenue side) is divided into alcoves, with fixed settles, upholstered in leather, giving them a semi-private character. The room is finished with Corinthian columns and pilasters and wooden panel work, painted ivory white. Over each of the four large fireplace mantles is a bronze memorial tablet. This reception hall opens directly into the north and south wings. It was intended that this room, in a large sense, should be a memorial to Ann White Vose. In the north wing is a library for nurses, intended for a quiet room, and suitably arranged with bookcases and appropriate furnishings. In the southern portion is a music-room, with reclining settles, a piano, the gift of a former house officer, and other suitable furniture.

The stairways in the north and south wings are constructed of marble and iron, and in the centre of the south stairway is an elevator. The second, third and fourth stories are practically alike, although the sitting-rooms are differently located and shaped, thus giving a variety to the nurses when off duty. The elevation of the lower floor is 12 feet, the first story 14 feet, the second story 11 feet, and the third and fourth stories 10 feet each. The sleeping-rooms vary from 8 feet 2 inches to 8 feet 10 inches wide and 14 feet long, giving 118 square feet of floor space and from 1,180 to 1,650 cubic feet of air space, according to the story on which the rooms are situated. There are accommodations for ninety-seven nurses, and all but four of the rooms are designed for one occupant only. Each sleeping-room contains a white enamelled bedstead with brass trimmings, a bureau, washstand, combination bookcase and writing desk, a small table, rocking chair, small chair, clothes pole, and a capacious clothes closet. All the furniture is made of curly birch, and was specially designed and made for this particular building.

Each floor is suitably equipped with toilet-rooms. In addition to the usual bath tubs, etc., the second, third and fourth floors have a Gegenstrom rain bath. An excellent feature of the Vose House is found in five practical balconies, on the second, third and fourth stories, designed for open-air comfort for the nurses when off duty.

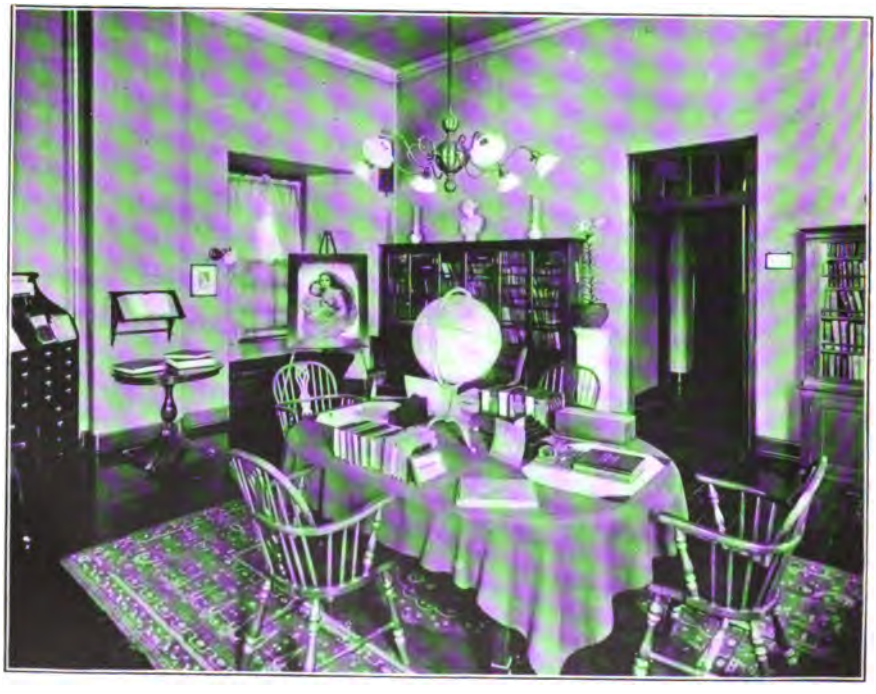
VOSE HOUSE.— RECEPTION AND MEMORIAL HALL.

In 1901 a covered corridor was built connecting the two houses for nurses. In the summer the glass windows are removed and flower boxes are placed on the sills between columns. In the winter the glazed windows are replaced, and bay and boxwood plants are so placed as to suggest a conservatory.

VOSE HOUSE.—NURSES' DINING-ROOM.

The cost of the building was $100,000, and for the furnishings, including elevator, refrigerating-rooms, etc., $22,000, and was occupied by the Training School March 19, 1900. The work incident to the training and management of so large a body of women was very much facilitated by these increased accommodations. It was at the time of its occupancy, beyond question, the best equipped house for nurses in this country.

VOSE HOUSE. — A BED ROOM.



VOSE HOUSE. — LIBRARY.

RELIEF STATION.

Between the years 1895 and 1900, the strides which the Hospital had made in its physical condition, and the increased amount of work accomplished, were readily recognized by the citizens at large. At this time petitions were received and the Trustees were very often importuned to create a hospital in the down-town district, that should give ready and prompt aid to accident cases, or cases of sudden illness. The expenditures upon the Hospital had been so large, and the City Council had been so generous, that the Trustees had some reluctance in asking for a sum large enough to build a first-class down-town emergency hospital. Most fortunately, on November 10, 1898, the Trustees received another munificent donation of $126,987.96, through Mr. Arthur F. Estabrook and Mr. C. H. Watson, executors of the will of the late Thomas T. Wyman, of South Boston, to be expended for the benefit of the Hospital. Another fortunate circumstance happened about this time. After the completion of the subway, one of the conditions was, that land taken by right of eminent domain for subway purposes, which was not needed after the completion of the subway, should revert to the City of Boston. By this reversion to the city, there was a plot of land on the west side of the north incline to the subway, facing Haymarket square and bounded on the west by Canal street and on the east by Haverhill street. With the approval of the Hon. Josiah Quincy, then Mayor of Boston, the City Government transferred, on March 24, 1900, to the custody of the Trustees, 8,507 feet of land, or 0.2 acres, the most prominent line fronting on Haymarket square. The assessors' valuation is $127,600. Thus it happened that the Trustees had at their disposal a liberal site in a section of the city largely given over to steam railroads, electric railroads, shipping and heavy teaming — a portion of the city where probably the largest percentage of accidents occur. This provided a suitable site, and the gift of $126,987.96 from the Wyman Fund built an emergency station, which was afterwards named the Boston City Hospital Relief Station.

The building is three stories high, with an ell of one story over the subway incline. It is constructed of brick, with sandstone trimmings, and makes a conspicuous landmark on the site of the old Boston and Maine Railroad Station. Upon Haymarket square is a dignified porch, with a balcony supported upon eight Doric columns, surmounted by ornamental iron railing. The general style of the exterior resembles the South Department. The building is surmounted by a heavy cornice. There are three entrances — the first, or principal doorway, on the Haymarket square side, a private entrance on Canal street for kitchen goods, etc., and an ambulance entrance near the north end of the Canal-street wall.

The first story is planned to meet the requirements of administration-rooms, with waiting-rooms, surgical dressing-rooms, etc. At the main entrance is the general waiting-room, 32 by 28 feet. This is intended to be a distributing point for the various other rooms, and for friends of patients who are being treated. At the left of the entrance is placed the administration office, pharmacy and surgeons' lockers. Immediately opposite the front entrance is the attendant's office, where all persons are received. Here are the telephones for the outside and house service. By means of two systems of signal bells, all possible conditions affecting the service of the station can be indicated. Upon this floor are five surgical dressing-rooms, all but one being large and commodious. These rooms are furnished like the modern operating-room — marble floors, hospital curved base, glazed tile dadoes, above which is hard cement plaster, finished in enamel paint. There are also two bath-rooms, intended for sunstrokes, and rooms for the storage of surgical supplies.

The second story is reached from the main hall by a stairway, or by a passenger elevator, which runs from the basement to the roof; and also by an iron stairway leading from the north end to the employees' dining-room on the third floor. This floor is divided into three parts. There are three wards for patients, each containing six beds, with a service-room in connection with them, and separate toilets, baths and lavatories for men and women are also provided. In the northern portion of the building are two large operat-

ing-rooms, between which are property-rooms, instrument-rooms, and a room for general surgical supplies. These rooms have marble floors, glazed tile dadoes, etc. All the operating and dressing-rooms are equipped with iron and glass furniture of the best standards.

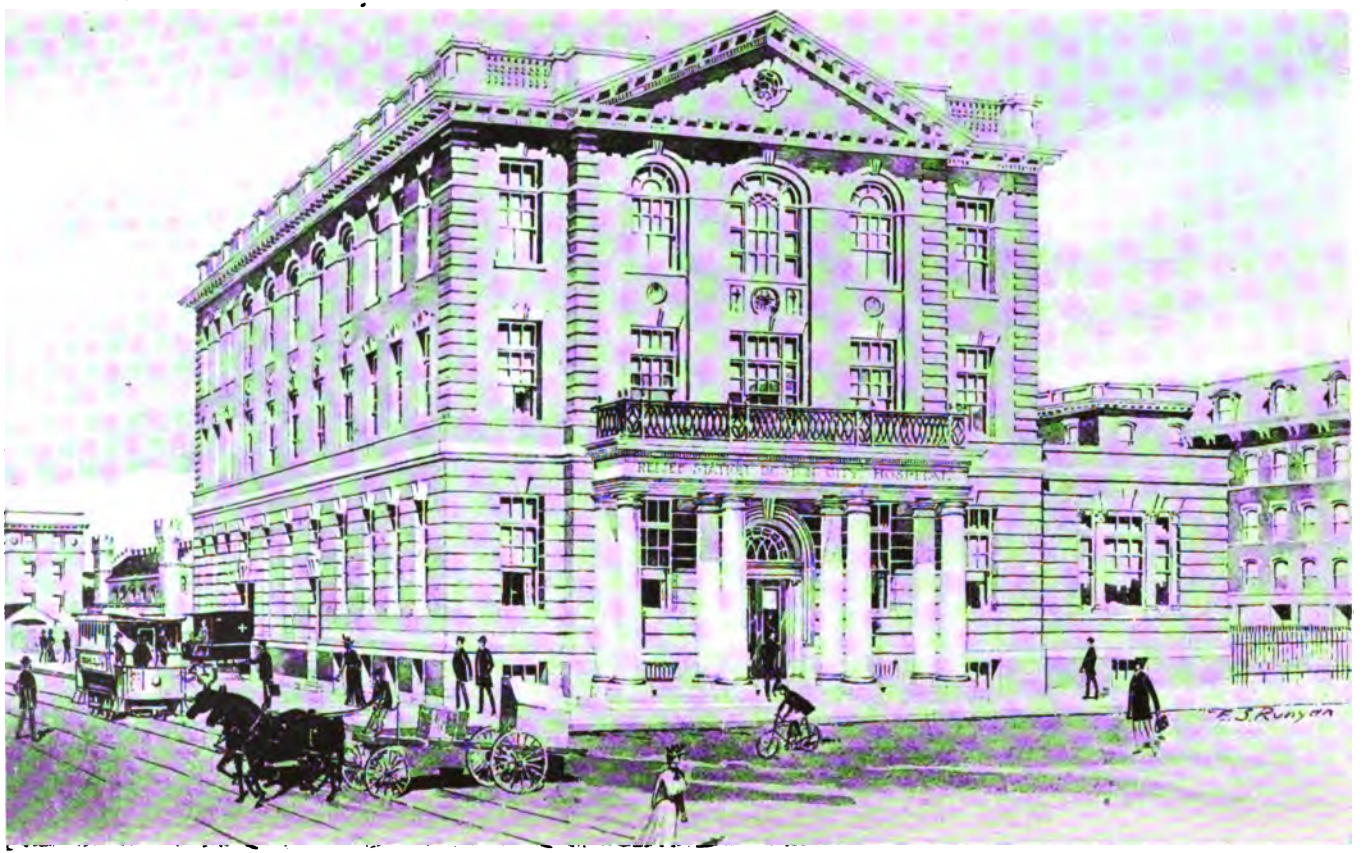
Upon this floor, cut off by private corridors, is a suite of apartments intended for the Resident Surgeons and House Officers on duty at the Relief Station.

The third story is divided into three different suites of apartments. Those at the south end of the building contain a sitting-room for nurses and bed-rooms for ten nurses. On the subway side are four chambers for domestics. The remainder of this floor is taken up by the kitchen and two dining-rooms, with well-arranged refrigerators, store-rooms, pantries and china-closets.

The roof is practicable for special use, as patients can be taken to the roof from any floor, by means of the elevator. In case of necessity, the roof would serve a most excellent purpose in the recovery of sunstroke cases during the summer season. It is also used as a roof-garden for the nurses and employees in recreation hours.

The north end of the first story is entirely separated from the main part of the building, and contains an ambulance station and stable. The stable is again separated by another wall and closed doors, with special devices for ventilation. Experience has shown that there is absolutely no stable smell anywhere in the Relief Station. The ambulance-room is sufficiently large for ambulances to drive directly in and the doors be closed. The ambulances can back up to a platform, level with the ambulance floor, so that patients are immediately removed and easily taken by an incline to the first story, or by elevator to the operating-rooms on the second story, as the case may require. Over the ambulance-room, in a mezzanine story, are sleeping-rooms for ambulance drivers, porters and male help.

The whole building was equipped with the best of everything that could be found for its purposes, and may be taken as a most excellent type of a hospital for emergencies, located in the business portion of a large city.



RELIEF STATION.

The illuminated tower clock in the pediment of the front façade of the building was the personal gift of Mr. Arthur F. Estabrook and Mr. C. H. Watson, the executors of the Wyman Estate, to whose generosity and discretion the city is indebted for the Relief Station.

This Relief Station was organized and opened to the public on February 20, 1902. The records show that the following amount of service has been rendered :

Number of Patients Treated at Relief Station from February 20, 1902, to February 1, 1906 (inclusive).

	1902-1903.	1903-1904.	1904-1905.	1905-1906.	Total.
First Treatment.....	19,064	25,996	28,073	29,390	102,523
Ward Patients.....	1,086	1,141	1,108	910	4,245
Total.....	20,150	27,137	29,181	30,300	106,768

It was estimated that if this Relief Station should render aid and assistance to 10,000 or 12,000 cases every year, it would justify its existence and the money expended upon its annual maintenance. The above statistical tables, however, show that it has more than trebled this estimate.

In the thirty-eighth annual report for 1902, the Trustees said: "They do not intend that this shall be a hospital in the usual sense of the word, because the situation and surroundings are not favorable to hospital conditions. Primarily it is intended that prompt and efficient aid shall be rendered to the sick or the injured who need surgical or medical relief, practically including all classes of emergency cases. The Trustees confidently expect that this branch of the hospital service will prove a most beneficent one in first aid to the injured and a great boon to large numbers of persons who, unfortunately, may be injured."

The policy as here outlined has been strictly followed, very few second dressings having been done. Patients are removed to the Main Hospital, to their homes, or elsewhere, as soon as possible after their admission. It is quite unusual

SURGICAL OUT-PATIENTS DEPARTMENTS. WARDS B, C AND D.

for a patient to remain at the Relief Station, even in extreme cases, longer than from three to five days.

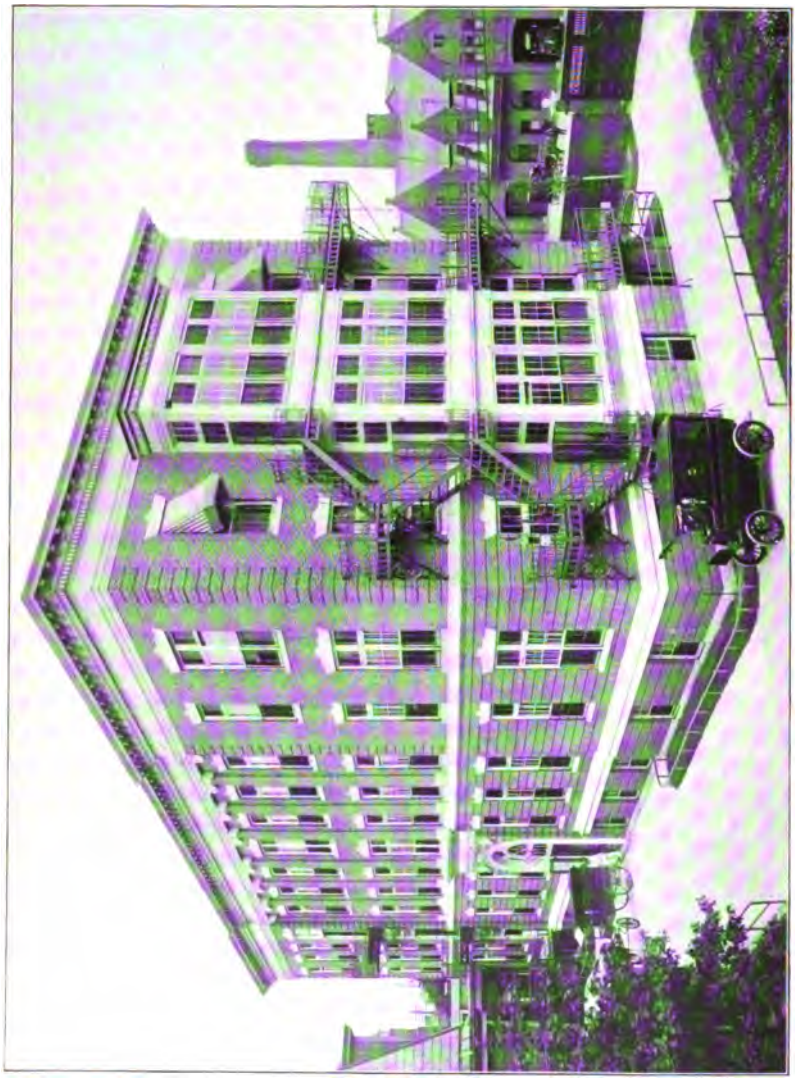
The cost of maintenance of the Relief Station has been as follows: 1902–1903, $34,905; 1903–1904, $37,036; 1904–1905, $35,496.

NEW SURGICAL OUT-PATIENT DEPARTMENT BUILDING.

On January 5, 1901, an appropriation of $100,000 was made by the City Council to the Trustees of the Hospital for the erection of a new Surgical Out-Patient Department Building. This sum was subsequently increased to $120,000. It stands on the Hospital grounds at the corner of Harrison avenue and East Concord street, on the site of the "Old Lodge," which formerly held all the out-patient services. The building is practically five stories high and is shaped like the letter L, with the longest leg on East Concord street. The general appearance harmonizes well with the older Hospital buildings near it. It is built of brick, with gray, concrete, stone trimmings. The only entrance is from the Hospital grounds, at the inner right angle of the L, and the two wings stretch in either direction, with a large central waiting-room and departments in either wing.

The construction of this building is fire-proof throughout. The floors of the surgeons' rooms, dressing-rooms, and other rooms subjected to hard usage, are terrazzo, divided by Tennessee marble strips. The other rooms above the basement have hard pine floors, but the corridors and all basement rooms are granolithic. Like all the other buildings, it is heated from the central heating plant. The entire ventilation results from two large air inlets supplying indirect radiation. One of the objects wanted in the arrangement of the out-patient services was the largest possible number of small rooms, to secure the privacy always desirable in out-patient work, for the surgeon as well as the patient, and this is obtained to a notable degree. The various rooms are supplied with gas, electricity, compressed air and house telephone system, according to the requirements of each service.

The general arrangement of the different services can be easily understood by a study of the plans (see five plates in Fortieth Annual Report, 1903–1904). The consulting, exam-



PAVILION III.—WARDS K, L AND M. AMBULANCE STATION.

ining and dressing rooms of the different services, utility, splint, linen and plaster rooms conform to the needs of these services as far as space will permit. The right wing of the first floor is used in the surgical division for men and boys,

and the left for the nervous out-patient department; in the second story, the right wing is the surgical service for women and children, and the left wing the gynæcological service. In the third story the right wing serves for the ear and the eye, and the left wing for the throat service. The fourth floor is divided into bedrooms, used as sleeping-rooms for orderlies and subordinate officers. The lower floor is divided so that it may be used for the future extension of Hospital services not needing special requirements. At the present writing the right wing is used for genito-urinary surgery, and the left for massage and other treatment.

All the stories are reached by two iron stairways, and also by an elevator in the central part. The lower floor contains lockers for physicians and surgeons, and also a room separate and smaller for House Officers and Surgical Dressers. In addition to the usual water-closets and toilets, there are also tub baths and shower baths. In another part of this story, lockers and toilets are placed for the nurses of the Training School when assigned to this part of the Hospital work. The rooms for all the services are amply supplied with plumbing fixtures, sinks and every convenience of the best design.

NEW PAVILION III; WARDS K, L AND M.

On January 5, 1901, an appropriation was received for a new ward for the isolation of patients, to replace the old building known under the various names of the "foul ward," "Pavilion III," "Wards K and L." This appropriation of $120,000 was subsequently increased by $10,263, making the total cost of the building $130,263.

This building, erected upon the site of the former Pavilion III, is three stories in height, and, by means of outside basement areas, the lower floor is made useful for Hospital living purposes. It is built of brick, with marble trimmings, and its general style corresponds with the buildings of the South Department and the Pathological group. It is 138 feet long and 50 feet 6 inches wide, and the main story has the same level as the other buildings, thus giving easy access. The former entrance, at the north end of the building, has been

abandoned. The general entrance is now on the north side area, with an iron stairway and elevator leading from the lower floor to the top story. The first, second and third stories are very similar in their arrangements, and consist of a corridor 136 feet long and 10 feet wide, with rooms on each side.

This building is intended for the isolation of cases not permissible in a general open ward, such as erysipelas, cellulitis, burns, diarrhœal cases, and for patients not desirable in an open ward, but who are not alchoholic. All the rooms, excepting the three corner rooms, are intended for two patients only. The entrance door of each room is put upon the extreme left of the inner wall, leaving a space near the doorway for one bed, the window being on the extreme right, allowing another bed on the exterior wall, thus having two patients to each room, without crowding, with no place for additional beds. Each room is 17 feet 6 inches long by 10 feet wide. All the stories are 14½ feet high, thus giving 2,538 cubic feet of air for each room, or 1,269 cubic feet for each patient. The room upon the southeast corner is intended for four beds, and was placed at this point on account of its sunny location, and is convenient for diarrhœal and other cases, as it is near the water-closet and service-room. There are also two other large rooms, with four beds each, intended for convalescent adult patients, on the first and third floors; but those on the second floor are designed for children. The total number of beds in the first story, Ward K, is 36; in the second story, Ward L, 44, of which 12 are for children; and in the third story, 36; or a total of 116 beds.

Nearly one-quarter of each story is devoted to the various service-rooms which are always necessary to make a well-balanced hospital ward. The service-room for nurses is ample for all purposes, being 18 feet long and 17 feet 6 inches wide. The food is brought to the service-rooms by food-lifts, going from the lower floor to each story separately, thus affording no air communication between the different floors. The walls have glazed tiles, 6 feet 6 inches high, and the floors are mosaic. Each service-room has a refrigerator constructed with five compartments, and is a part of the

building construction. The outer walls are covered with glazed tiles, like the rest of the room, and the inner parts with glass. Other appointments include a porcelain sink, china-closets, shelves for crockery, and a large gas stove, and each duty room has an air shaft for drying dish towels, often so offensive. The toilet-rooms and water-closets are reached by means of a corridor, passing out through an open-air loggia, thus giving no opportunity for the foul air to go from the toilet-rooms to the main wards. Adjoining this, but inside the loggia, is a bath-room containing a porcelain bath. The walls have glazed tiles and the floor is mosaic. Outside of the loggia is an iron balcony suitable for the airing of beds and bedding, and for similar hospital purposes. This group of rooms also contains a closet 17 feet 6 inches long and 9 feet 6 inches wide, in which are installed galvanized-iron racks for hanging of patients' clothes. There is also an auxiliary utility closet for keeping bedding, cradles, crutches, extra bed linen, and a variety of ward furnishings, to save the nurses from walking half the length of the ward to the linen-closet. The linen-closet is situated on the north side of the building, and has a counter shelf, overhead shelves, with racks for ward linen. Upon the south end of each building is a sun-room 13 feet by 12 feet, intended chiefly for winter use. Nearly the whole of the east, south and west walls of each story has a continuous iron balcony, available as an airing place for patients, and also for a fire escape.

The lower floor is not intended to be occupied by patients, except in the extreme southeast corner, where four rooms, two of which have adjoining baths, are used for cases suspected of having infectious disease until the diagnosis is determined. There are also public waiting-rooms, another large room with utility closets, two extra storage-rooms for patients' clothing, a porters' room for soiled clothes, and a sterilizing-room, with two air-tight compartments for the disinfection of clothing by formaldehyde. Two small rooms, one for nurses and one for orderlies, each containing lockers for outdoor clothing, have a lavatory and water-closet, and the doctors' robing-room gives a chance to change garments

WARD E. PAVILION III, WARDS K, L AND M. LAUNDRY.

for visiting a suspicious case. Several other rooms provide for the storage of extra furniture, always desirable in a building containing 110 patients. The stairways are iron, with red slate treads; two risers of fire-pipe and hose are placed at each half of the building; iron grilles guard all the windows and outer doors, and fly-screens and awnings are kept for summer use.

The building is heated from the central plant by indirect radiation, air being forced by a large propulsion fan, and passing over steam coils; the rooms are regulated automatically by thermostats. The ventilation is partly by ridge ventilation, from vents in two central walls, and partly by a large aspirating shaft near the centre of the building. The wood finish is Florida ash, all outer corners rounded and inner corners coved. The doors are perfectly plain, veneered, and without panels or mouldings.

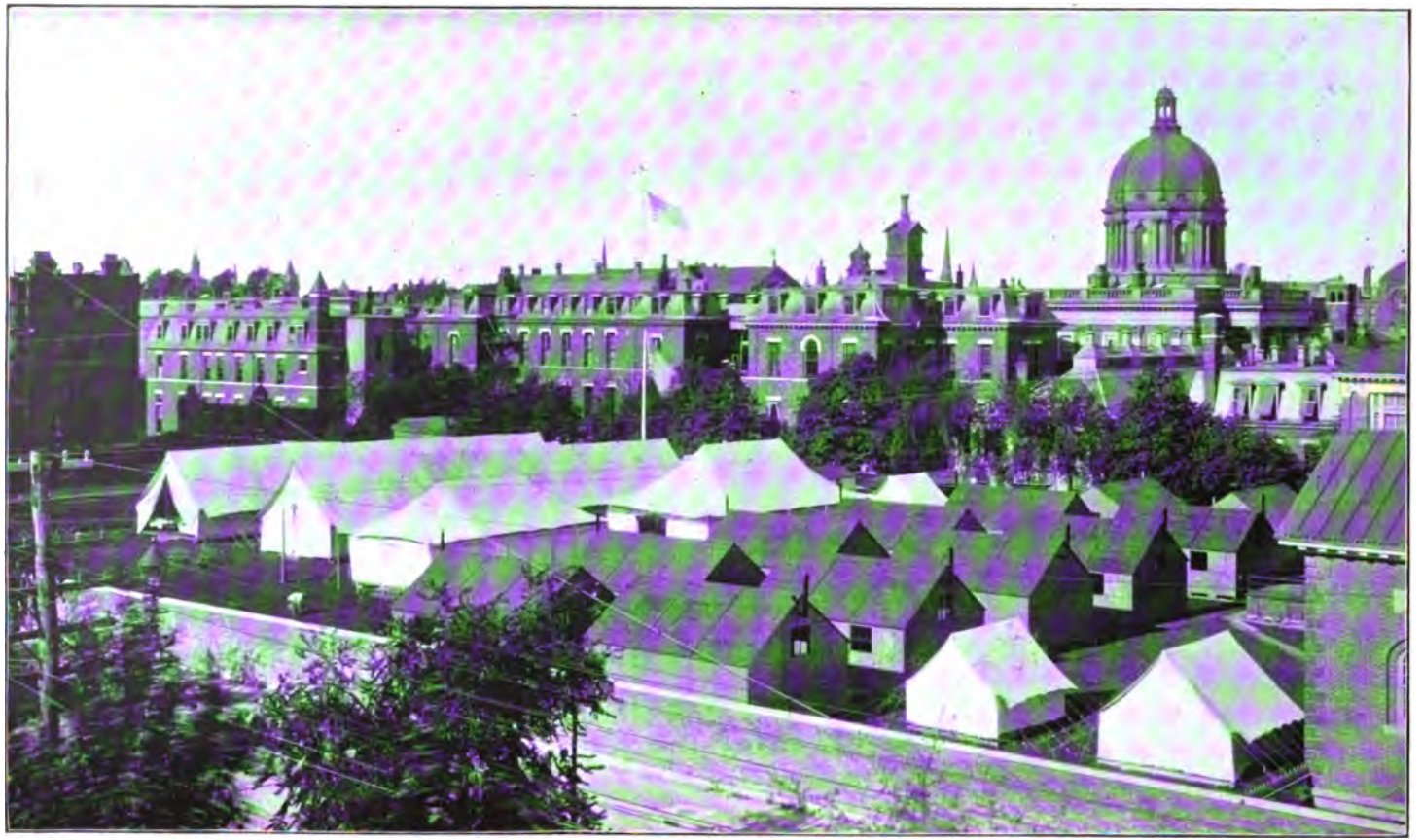
All the corridors on the three stories of this building are terrazzo, but the rooms upon the lower floor are granolithic. The baths and toilet-rooms are mosaic, and all the rooms occupied by patients are made of Georgia rift hard pine, tongued, grooved and blind-nailed.

The lower story connects with two of the main corridors by means of a granolithic incline, so that patients can be transferred from any ward of the house to any story of this building in inclement weather, without being carried out of doors.

This building adds to the Hospital equipment one of the finest features of recent years, and it might serve as a model for a building in a large general hospital requiring isolation.

TENT WARDS.

The use of tents in connection with hospitals is nothing new. When used as wards, the dimensions and configuration, to be the best adapted as wards for the sick, are somewhat different from tents as ordinarily made. They should be parallelogram in shape, if for ten or more patients, at least 20 feet wide and 18 feet high, with wall flaps at least 5 feet high, and the length according to the number of beds



CAMP OF TENTS AND HUTS FOR SICK SOLDIERS, 1898.

wanted. As tents are mostly used during the summer months, and there is a free circulation of air, the beds may be put, if required, closer together than in an indoor ward. They should have a board flooring, made in sections, for transportation when out of season, so as to allow free circulation of air underneath, to obviate dampness. They should have fly ends suitably arranged to be tied down in windy and stormy weather. One, and, still better, two flies serve as a protection from the hot sun or rainy weather.

The first mention of tents for the Hospital was in the records of the Trustees, at their meeting of June 8, 1869. "Voted, that the Trustees be authorized to procure such number of tents as may be deemed proper, to be placed in the yard for the use of such patients as it may be deemed expedient to place therein." At that time four small tents, 14 by 14 feet, were established. During the construction of the new buildings, between 1872 and 1878, tents were more or less used, but never to accommodate a total of more than eighteen or twenty patients. In 1881 a tent colony was established on the surgical side, which accommodated forty patients. This was increased, in a year or two afterwards, by two additional tents, to sixty patients. There was also a tent used as a scullery and for serving food, and also one that served as nurses' headquarters and for linen, stores, medicines, etc.

The culmination of the tent service was reached in 1898, when the Hospital was called upon at short notice to receive a steamship load of wounded and sick patients returning from the Spanish-American war. The tent service at that time was increased to 200 beds. The Hospital was asked on a Sunday (there being no tents then in commission) to receive on the following Thursday 202 soldiers who were en route from Cuba. Our tents were immediately taken from storage and a complete hospital tent colony was established, ready for the 202 patients in four days' time. This was afterwards extended to 300 patients. During the season there were 410 soldiers treated in these tents. In addition to the nurses' headquarters, linen-room, there was also constructed a scullery, taking hot and cold water from an adjoin-

INTERIOR OF A HOSPITAL TENT.

ing ward, and also water-closet shanties at a location near to an existing sewer.

These tents have been most useful, not regularly, but from time to time, and relieved the condition of the Hospital considerably, especially when wards had to be vacated for laying new floors, and for other radical renovations.

Every large hospital in the city, ground space permitting, should have ward tents that may be immediately put in use in various emergencies, before alluded to, and would be particularly useful in case a ward building should be made untenantable by fire.

It has been observed that, except in cases on border line of delirium, patients do better in tents than they do in the wards. These tents have always been used for men, but never for women.

HEATING AND LIGHTING.

The boiler-house, dynamo-house, ambulance station and coal-pocket were located upon land owned by the city, between Albany street and the Roxbury canal. The Hospital Department was allowed to occupy it by favor, and it was not until July 19, 1901, that, by vote of the City Council, this was transferred to the Hospital Department.

In these modern days of engineering the use of superlatives is dangerous, because no sooner is it said that a certain plant is the finest and best equipped, or that a certain engine, boiler or dynamo is the best or largest in the world, than it is found that some other piece of machinery surpassses its predecessor. This is also true of hospitals, which now not only represent all that is modern in the art of building, but must utilize various conveniences perhaps unthought of elsewhere. They also represent the acme in engineering ingenuity. It can be said, with all these things in mind, that the Boston City Hospital has the most highly perfected heating system in all of its appointments.

In the history of the Hospital the heating and power plant has undergone three complete constructions. This has been necessary not only on account of the largely

increased size of the Hospital, but to meet the transmission of the volume and distance of steam and power and its various uses.

In the early history the boiler-room was in a house on Albany street parallel with the Administration Building. Steam was generated from three tubular boilers at thirty pounds pressure. In a portion of the laundry building of that period, steam was carried to a large battery of steam coils. The fresh air, drawn through a latticed window, was forced by a large propulsion fan, 15 feet in diameter, through a large sub-basement conduit. From this main conduit the heated air was distributed by multiple smaller ducts direct to the various wards, living-rooms and offices of the buildings. There was a secondary series of ducts admitting cold air, and by mixing valves the desired portions of heated and cold air were supposed to be supplied as needed.

The propulsion of air through conduits, in some places 10 feet wide by 12 feet high, is attended by too many unexpected leaks and mishaps to attain proper results. The system was never considered a success. A fuller description, if desired, can be found in the City Hospital Medical and Surgical Reports, Vol. I, page 17.

Unfortunately, rats soon burrowed between the sewers and the imperfectly constructed air conduits, and air vitiated with sewer gas was pushed into the wards. Members of our Medical Staff who served during the early years of the Hospital asserted that all patients with surgical open wounds who were assigned to beds near the air inlets invariably had erysipelas, pyæmia or some other septic complication, many of whom died.

Between 1864 and 1876 many expedients were tried to remedy the defects, but never with success.

When the period of new buildings from 1875 to 1876 was reached, the former system just described was abandoned, and the second period of reconstruction was established. The battery of boilers, increased to five in number, was placed on a much lower grade, permitting a return of condensed steam by gravitation. Radiators were installed at the ceilings of basement rooms. Fresh air reached these

radiators by newly-made, near-by fresh air inlets passing through the radiators to the existing inlet ducts, making a well-defined, indirect steam-heating system. The radiator boxes had mixing valves operated by a nurse or other person in any ward or room. Steam was conveyed directly from the boilers to these radiators, the former conduits having been abandoned. This system yet obtains in the older wards and has proved a success. One exception, however, should be noted. The mixing valves were of cheap construction and soon got out of order and became inoperative. To this was added the complication that the Training School system made frequent changes in head nurses and assistants, so that an engineer's assistant was employed, whose duty it was, during winter weather, to watch the temperature of the wards, regulate the valves, fresh-air inlets, and other details pertaining to the heating system. In fact, the system then established seems more efficient than some others more modern.

The third period was in 1893–94. At this time the "New Buildings" previously described — between 1894–1898 — required a radical enlargement of the heating system. A new power and dynamo house was constructed on the Hospital wharf property, located in the rear of the Hospital, but separated by a much used avenue, and bordering on the Roxbury canal. In accordance with the best modern practice, all the power required for all branches of the Hospital is generated in one building and a system of electrical and steam distribution delivers the power to local points of consumption with a minimum loss in transmission. The theoretical centre of distribution, from the standpoint of electrical and steam-power consumption and convenience in receiving coal, was taken for the location of the generating plant. This has ample power capacity for future lighting, heating, ventilating, etc., as may be required by any and all further extensions and new buildings.

The boiler-room contains nine 66-inch by 19-foot 6-inch 125 horse-power and one 72-inch by 19-foot 150 horse-power boilers, all of the horizontal return tube type, making a total of 1,275 horse-power. The boilers are set in two batteries, six in

one and four in the other. They are banked on each side of a wide aisle, above which a double row of skylights and ventilators afford abundance of light, room and air.

Each boiler is equipped with an economy smoke preventer and a feed-water heater, with the settings so arranged that either natural or forced draft may be used. The grates, of which there are 360 square feet, are the modified Tupper pattern designed for the use of either anthracite or bituminous coals. All the condensed steam of both the high and low pressure mains flow back to a large return tank situated in the pump-room adjoining the boiler-room. The exhaust steam, from the pumps and blower engine, passes through coils of pipe in this return tank, thence into the main feed-water heater, through which (in summer) passes the exhaust from the electric light engines. During the cold season the exhaust steam from the various engines is used for heating purposes.

The boiler feed pumps, of which there are three, one a Davidson vertical duplex type and two Davidson horizontal type, draw the water from the return tank at a temperature of about 180 degrees Fahrenheit and force it through the main heater, from which it passes at a temperature of about 204 degrees Fahrenheit, thence through the economizer into the boilers, at a temperature of from 300 degrees to 340 degrees Fahrenheit.

An auxiliary feed line is connected with all the boilers, so that, in case of accident to any of the apparatus, the boilers can be fed direct, the pumps drawing water from the city mains.

To each boiler feed pump is attached a stroke counter. The number of strokes which the pumps have made during the preceding twenty-four hours is noted each day at 8 A.M., and from this, together with the weight of coal consumed during the same period, a computation is made, which shows the amount of water evaporated per pound of coal and is entered by the Chief Engineer with other data on the daily log sheet, for the Superintendent, and serves to show the relative value of the different coals as well as the method by which it is being used, and a daily synopsis of the boiler-house doings of each day.

To serve as a check against the pumps, a weekly test is made. The feed water is allowed to pass through a hot-water meter for a twenty-four hour period. The amount thus measured is computed with the pounds of coal burned and the results compared with that shown by the pump stroke counter. The No. 10 boiler, which is the last boiler installed, is equipped with a complete set of instruments, consisting of an Orsat Gas Analysis apparatus, a pyrometer, a calorimeter, weighing scales for coal and water, accurate thermometers, injectors, etc., for conducting evaporative and efficiency tests. This is used whenever a new lot of coal is purchased. By this means it is possible to determine the quality of the coal, and compare one grade with another.

The high pressure steam drums from each boiler, 5 inches in diameter, are led into a horizontal 12-inch main header, supported on roller hangers. From this header, each generator engine is served with a 5-inch supply pipe connected to a Straton separator, and a 6-inch high pressure and an 8-inch low pressure main is also taken from this main supply. The 6-inch main extends from the boiler house through tunnels and serves with its branches the twelve engines used for power, ventilating and refrigerating purposes, and the five steam pumps for the elevator service, as well as the steam required for coal hoisting and conveyor apparatus, boiler feed pumps and blower engine, and the reduced pressure necessary for the hot water boilers, one of which is located in each building, and also the steam for sterilizing, vent flue heaters and cooking purposes. This pipe extends in five different directions, the longest run being 1,495 feet from the power house. Drip traps are provided at all outlets and low points and discharge the condensed water into a return pipe, which is carried back to the return tank in the power house. Both high pressure, steam and return pipes are hung on roller hangers, provided with expansion joints, and covered with 85 per cent. magnesia pipe covering.

The 8-inch branch from the header is connected with a 10-inch Waters reducing valve, which, in turn, is connected with a 14-inch main. This is used for heating purposes, the steam pressure being reduced to 6 lbs. maximum to less than

1 lb. minimum, as may be required. Connected with this 14-inch main are three branch mains, one 10-inch, one 8-inch and one of 6-inch diameter. These branch mains extend to the different buildings through tunnels and basements. Tap branches for each building, fitted with reducing valves and by-passes, are taken from the main branches, the arrangement being such that the amount of steam required to heat each building can be regulated independent of the others. The low pressure pipes run in the same general direction as the high pressure, and are provided with drip traps, etc., the returns for condensed water from radiators and risers all coming back to the power house, to be again pumped into the boilers.

COAL-POCKET.

At the rear of the boiler house, connected with it, and bordering on the Roxbury canal, is the coal-pocket, with a capacity of 3,000 tons. It contains the coal-handling machinery, consisting of a Procter coal tower and shovel, a Rawson and Morrison type double hoisting engine and Hunt coal conveyor apparatus.

The coal is hoisted from vessels lying alongside of the wharf by the steam shovel, and carried by the conveyor from the tower to any desired point in the coal-pocket, where it is automatically dumped. When required, the coal is drawn from the coal bunker and carried by the conveyor to the boiler-room and dumped into receiving hoppers, which have a capacity of about 30 tons. From these storage hoppers the coal is drawn off by the firemen into weighing hoppers, where 800 lbs. is weighed at each discharge and then allowed to flow through connecting tubes to a truck car on the floor of the boiler-room. The coal is then shovelled into the furnaces. This is the first human handling the coal has received since leaving the shaft of the coal mine. The truck car being mounted on rails is easily transferred from one boiler to another. After the coal is automatically dumped into the receiving hopper, the coal conveyor in making its circuit passes under the floor of the boiler-room, and the ashes are shoveled into the conveyor buckets and carried to an ash

hopper where they are automatically dumped. In this way the ashes, as well as the coal, are handled by a single machine and finally dumped automatically into ash carts.

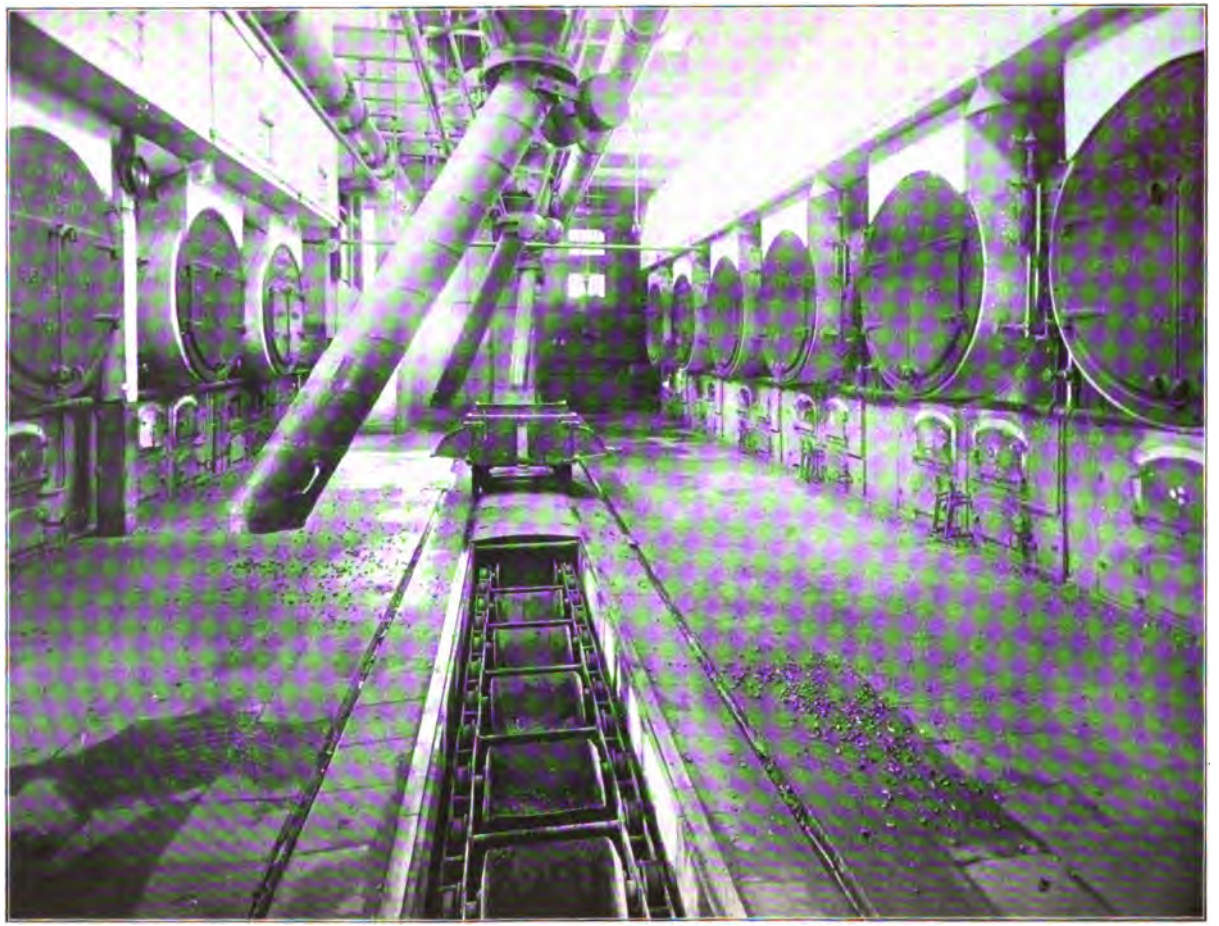
ELECTRIC LIGHTING.

The electric generator equipment consists of three "simple" 150-horse-power Harrisburg Ideal engines, each directly connected to an 80 kilowatt Siemens & Halske generator, which supplies current at a constant potential of 220 volts. The current for lighting and the motors is carried by conductors passing through electric conduit pipes, all under ground or in sub-basements, to a centre of distribution in the basement of the Administration Building. The electricity which these dynamos generate is used for running the motors throughout the buildings as well as lighting the 4,450 or more incandescent lamps and inclosed arc lamps and the necessary current for X-Ray coils, cautery knives, trans-illuminating lamps, galvanic and faradic apparatus and other surgical instruments.

The switchboard is made of marbleized slate, highly polished, and consists of 15 panels; each generator panel contains a Weston ampere meter and volt meter, a rheostat and generator knife switch. The feeder panels contain an ampere meter and volt meter for each circuit, circuit breakers and the necessary distributing knife switches. A smaller switch on one of these panels makes the station volt meter available for use as a volt meter on any of the station units or as a ground detector for any of the circuits. There is also a switch on one of these panels which makes available the outside Edison Company's current in cases of emergency. The necessary switches, meters, etc., for charging the storage batteries of the electric automobile ambulance are also mounted on one of the switchboard panels.

VENTILATING SYSTEMS.

The ventilating systems, which have been modified with the growth of the Hospital, may be divided into four periods as to methods.



Boiler House, Showing Coal and Ash Conveyors, Weighing Hoppers, Etc.

First. — No system at all. This was illustrated in the original Administration Building and Pavilions I and II. Some fireplaces were introduced, in which no fires were lighted for many years. The Administration Building was subsequently treated by a variety of expedients, mostly by Emerson or Mihan ventilators, over reconstructed vent-flues. Pavilions I and II later received a ridge ventilation system.

Second. — The ridge ventilation has proved quite successful, as in Pavilions I and II, Wards P, T, A. E, and others.

Third. — By heated aspirating shafts, as in Wards Q, R and S, N and O. This system, considering its economy, is probably the most successful of any existing in the Hospital or at the South Department.

Fourth. — The plenum system, by the use of propulsion fans, illustrated in the Surgical Amphitheatre, Wards W and X. Pavilion III and elsewhere.

Those desirous of pursuing the details of the ventilation are referred to Dr. Cowles' description in the Thirteenth Annual Report of the Hospital, where the ridge and the aspirating systems are fully treated. The plenum system, existing in our recent buildings, is too well known to require elaboration in a limited history of this kind.

SEWERAGE.

Every hospital must have an efficient sewerage system. In the early years much trouble resulted from the seepage of ooze and flow of tides in some parts of the building, owing to the low grades upon which the Hospital was built. Various expedients were tried, such as tide-gates and other contrivances, but the difficulty was never wholly remedied until 1878–9, when the large intercepting sewer for the south side of the city was built. This construction served as a bulkhead, and since that time there has been no trouble.

In the older buildings the sewage was removed by old-fashioned "barrel" sewers, but the sluggish flow caused the solids to settle, forming a deposit that gradually became obstructive. In the buildings erected from 1872 to 1876, the rain and surface water were delivered into catch-basins

and the soil-pipe sewage into the sewer proper. In the buildings erected during the past twelve years, the roof-water is sent out through the centre of the buildings, the roofs pitching to that point. This method flushes the soil-pipes in ordinary weather, but it becomes troublesome if the inlets on the roof become clogged by leaves, chips and similar débris, which occasionally occurs on city roofs.

At present the outlets are plentiful, with but little trouble except in sewer pipes receiving dish-water from domestic sinks, which, more frequently than other drains, become clogged with grease.

The location of every drain or sewer on the premises has been very carefully traced and the locations indicated on special drawings of the buildings and grounds filed at the Hospital.

TELEPHONE SERVICE.

In a group of thirty-two hospital buildings upon twelve acres of land, having a total of 879 beds, with the necessary business and work of the accident service and the house routine, it is obvious that prompt and efficient ways are indispensable for the transmission of orders and general intercommunication. This is accomplished by a local house telephone system. The Administration Building has a central switchboard with ninety-six local stations for the Main Hospital and the South Department combined. The switchboard contains all the latest improvements in drops, visuals and tell-tales.

On the same switchboard are nine other stations, each connecting with the long distance outside telephone lines, besides one direct line to the Relief Station.

The combined business of this system requires six operators during the twenty-four hours — two between 8 A.M. and 5.30 P.M., two during divided portions of the night, and two at the South Department. There are other small local systems in various parts of the Hospital.

REPAIRS TO BUILDINGS AND GROUNDS.

The money expended on the Hospital buildings and lands has been large. In the course of forty-two years constant outlay has been absolutely necessary to keep the buildings in good repair, and the lawns, roadways and sewers in the best condition. This has resulted, in a large measure, by reason of the unfortunate site. Reviewing the conditions of the site told on page 4, it can be easily understood that so many buildings erected upon piles and made land must rapidly deteriorate, and the settling cause many cracks in the walls and plastering.

The rapid depreciation of a large heating plant, the very large amount of painting, both inside and outside, necessary to preserve the buildings and to keep a thrifty appearance, the never-ending repairs on fixtures and furnishings, the unceasing demand for new conveniences, the work to keep roofs sound and weather-proof, the effort to have sewers and drains always kept clear — these, and the thousand constantly recurring petty repairs, which are never fully finished, require large sums of money, which are annually assigned to the division of "Repairs."

To illustrate: Without giving a full tabulation of this division of Hospital work, there has been expended upon repairs of buildings and grounds, during the past ten years only, a total of $305,434. Of this sum, there was expended at the Main Hospital $232,082, or an annual average of $23,208; upon the South Department, $56,679, or an annual average of $5,667; upon the Relief Station, in four years, $4,177, or an annual average of $1,044; on the Convalescent Home, $12,495, or an annual average of $1,249. This expense, taken from the annual maintenance appropriation, does not include some large, unusual things. For instance, the care of the soldiers in the Spanish-American War, in 1898, cost the Hospital nearly $10,000 for special accommodations beyond the normal capacity of the Hospital. The reconstruction of buildings, changed from one business to another, to meet the natural development of the Hospital, has also involved large expenditure. But the results have

justified the cost by the gradual evolution of a complete and well arranged, large, general hospital, which is a credit to the City of Boston, placing it at the head of municipal hospitals in the United States.

The labor and material required to keep so many buildings and their fixtures and furnishings in proper condition, and the inevitable expenditure for such an end, may be clearly seen from a glimpse of the magnitude of the following items, used as examples:

Floor Areas.

Main Hospital	304,000 square feet,	or 6.98 acres.
South Department	99,000 " "	" 2.27 "
Relief Station	19,840 " "	" .45 acre.
A total of	422,840 " "	" 9.70 acres.

Volumetric Cubic Feet. (Inside.)

Main Hospital	4,000,000
South Department	1,500,000
	5,500,000

Number of Plumbing Fixtures in Various Departments.

	Bath Tubs.	Shower Baths.	Foot Baths.	Water Closets.	Water Tanks.	Urinals.	Set Wash Bowls.
Main Hospital.....	81	9	6	160	220	30	98
South Department.....	30	.....	.....	48	70	4	.....
Relief Station.....	8	.....	1	11	14	13	.....
Convalescent Home.....	3	.....	.....	6	6	.....	.....
Totals.....	122	9	7	225	310	47	98

	Sinks.	Slop Hoppers.	Lavatory Basins.	Combination Sink and Lavatory Basins.	Medicine Closet Bowls.	Wash Trays.	Drinking Fountain.
Main Hospital.....	188	69	86	11	20	12	7
South Department.....	41	21	15	.....	4	9	.....
Relief Station.....	15	3	8	.....	.....	.....	.....
Convalescent Home.....	5	.....	.....	.....	.....	.....	.....
Totals.....	249	93	109	11	24	21	7

A total of 1,332 plumbing fixtures, with 1,266 faucets.

LANDS AND GROUNDS.

The history of the lands and grounds now in the custody of the Trustees of the Boston City Hospital has never been tabulated or fully described. The following facts were obtained from authentic sources. The areas of the lands in charge of the Hospital Department have been described previously in this paper, but are here tabulated for the sake of ready reference.

Area of Lands in Charge of Hospital Department.

	Grounds, Square Feet.	Acres.	Number of Buildings.
The Main Hospital buildings and lot bounded by Harrison avenue, East Concord street, Albany street and Massachusetts avenue, March 27, 1858	430,963	9.9	23
The South Department, 745 Massachusetts avenue, containing lands bounded by Massachusetts avenue, Albany street, Northampton street, and land of Robert Treat Paine	125,736	2.9	9
Hospital wharf on Albany street, ambulance stable, boiler house, dynamo house, coal-pocket, storage house	69,785	1.6	5
Convalescent Home, 2150 Dorchester avenue, near Milton Lower Mills, April 19, 1890	610,500	14.0	4
Relief Station at Haymarket square, Canal and Haverhill streets	8,507	0.2	1
Totals	1,245,491	28.6	42

The pavilion plan permits lawns and breathing spaces, and favors the free circulation of air between the different buildings. The most striking feature, perhaps, is the large oval lawn and grounds in front of the Administration Building, between Pavilions I and II. In the summer it is particularly attractive, as it affords probably quite as large a lawn as any of the city public buildings, not counting parks and squares. Shrubbery, beds of flowering plants, and a row of trees near the avenue sidewalk, make an attractive area in the midst of a crowded section of the city.

The main entrance to the grounds is on Harrison avenue, opposite the southeast end of Springfield street. Asphalt, concrete and granolithic roads in different places, according to the nature of the traffic, run in various directions, as shown on the plans, so that any part of the Hospital grounds can be reached by road or path from the front gate. There are also two gates in the rear, upon Albany street, one specially constructed for undertakers' use, to have access to the mortuary; the other upon the north of the Laundry Building, for wagons entering with kitchen and subsistence supplies.

There is a large plot of land between the two Nurses' Homes and the Pathological Building, which is left as open space. It serves to accommodate the summer tent service, whenever the use of tents are required, as well as an exercise ground for House Officers, orderlies and others. There are two tennis courts and a hand ball court for the exercise of House Officers in winter months. In the summer, when the tents are not in use, marquise tents and shelters similar are set out for the patients who are able to be out and about the grounds, during convalesence.

In this part of the grounds are two "voting booths," which are known as the "suspect huts." They were organized as a hut hospital for the detention of applicants suspected of having smallpox. In the year 1901, forty-six persons were admitted to these huts. A vast amount of expense and vexation was thereby avoided. These huts are thoroughly equipped for receiving a case of suspected smallpox any day.

PROPOSED BUILDINGS.

The Trustees of the Boston City Hospital have at their disposal (Acts of 1880, Chapter 774, Section 2) the following sums of money:

Bequest of the late Lamont G. Burnham, at the time of his death a Trustee of the Hospital	$150,000 00
Interest received from the Executors, and accrued since, received by the Trustees	7,917 97
Total bequest	$157,917 97

This bequest was made to the Trustees under the following provisions quoted from the will of Mr. Burnham:

"I give said sum of $150,000 to the Boston City Hospital to construct and erect upon the Hospital grounds a building to be known as the Lamont G. Burnham Ward, for such uses and purposes as the Trustees of said Hospital shall in their discretion determine."

The Trustees on July 22, 1905, received the following appropriation:

For an Emergency Station in East Boston		$30,000 00

Subsequent to this they received from the estate of Ann E. Taggard a bequest:

"For establishing and maintaining an Emergency Hospital in East Boston," September 1, 1905 .	$7,599 36	
October 1, 1905, additional amount received .	3,865 99	
Total of the Ann E. Taggard bequest		11,465 35
Total appropriation for the East Boston Emergency Station		$41,465 35

The Trustees are devising ways and means for the erection of a two-storied building at the South Department to accommodate about sixty patients, to be used exclusively for cases of measles.

HOSPITAL BUILDINGS.

From the Year 1861 to February, 1906, in Chronological Order.

1861–1864. Administration Building.
- Second story for pay patients.
- Third story for temporary use of Ophthalmic patients.
- Above, the operating-room to seat 175 students.

Pavilion I, Surgical Wards A, B, C and D.
Pavilion II, Medical Wards E, F, G and H.
Boiler House, Laundry and Autopsy-room.
Porters' Lodge, corner Harrison avenue and Concord street.
Eight horse sheds for Visiting Staff.
Hospital opened for patients, Wednesday, June 1, 1864.

1865–1866. "Foul Ward," Pavilion III.
Coal shed on wharf lot.
Railway track and car from shed to boiler house.
Stable and Autopsy-room on wharf lot.
Fence east of Albany street.

1866. Smallpox Hospital removed to Albany street and repaired.
New building for smallpox on wharf lot.
Cholera Building on wharf lot (old Smallpox Hospital altered).

1867–1868. Porters' Lodge rebuilt and enlarged for Out-Patient Departments constructed in connection, corner Concord street and Harrison avenue.

1868. New steam boiler installed.

1871–1872. Addition to Boiler House and "Dead House" and Autopsy-room.

1874. Small glass house for saving and propagating plants for beautifying the grounds.

1875–1877. Medical Building, Wards Q, R and S.
Surgical Building, Wards N and O and Amphitheatre.
Medical Pavilion, Ward T, for men's medical ward.
Surgical Pavilion, Ward P, for men's surgical ward.
Kitchen Department, Bakery and Ice House.

1876–1878. Alterations and additions to sanitary improvements, heating, ventilating, in the older buildings.
Old Smallpox Hospital on Albany street refitted as a stable and old stable given up to Department Public Lands to be leased.

1879–1880. Old kitchen in centre building altered and refitted as a Dispensary.
Old Dispensary remodelled as a Steward's Office.
Old Elevator, Centre Building, abandoned and utilized as a ventilating shaft.

1882–1883. Fire escape bridges constructed between Wards D and O and Wards S and H.

1884–1885. New Rinse House constructed (old one demolished).
Dormitory for Nurses, "Nurses' Home," on East Springfield street.

1886. Four new boilers, to replace old ones condemned.

1886–1888. Building for contagious cases, Ward A, Scarlet Fever.
Building for contagious cases, Ward E. Diphtheria.

1888. New Garbage House.

1888–1889. Extensive alterations in heating system.

1888–1890. Building for Out-Patients, opposite Springfield street; entrance to Hospital changed from Concord street to Springfield street.

1889–1890. Convalescent Home, estate purchased from Asaph Churchill and reconstructed with ell, sun room, etc.; barn reconstructed, grading, new water and sewerage system. Open for patients December, 1890.
Brick walls on Albany and East Concord streets.

1890. Roof Garden, Ward O, organized.

1890–1891. Medical Library Building.

1891–1892. Reconstruction and alteration of old lodge building into Surgical Out-Patient Department.

1892. Reconstruction of entrance office and Out-Patient Departments.

1892. Lease taken of house, 57 East Springfield street, and called the "Nightingale," furnished as additional quarters for nurses.

1892 1893. New Stable and Ambulance Station.

1893. Centre kitchen repaired; ice-room and cool-rooms reconstructed.

"Epidemic Hospital" on Swett street placed under supervision of Trustees by Board of Health, and used for scarlet fever patients.

1893–1894. Boiler House erected on Wharf grounds.

1893–1895. South Department Buildings for contagious cases. Opened for patients August 31, 1895.

Lodge.

Administration Building.

Domestic Building.

West Pavilion for Scarlet Fever.

East Pavilion for Diphtheria.

Nurses' Home, East and West.

Laundry, Mortuary and Mortuary Chapel.

1894–1895. Pathological Building, at the Main Hospital.

Pathological Laboratory.

Mortuary, Mortuary Chapel.

1894–1898. Surgical Operating Building and Wards N and O Building enlarged and reconstructed.

(Wards N and O reoccupied June, 1898.)

1894–1896. Open Ward Building, Wards W and X. Occupied October, 1896.

1895. Grading and erecting Ambulance Shed.

New fire escapes on all buildings.

Coal Shed rear of Boiler House.

1896. Building brick walls on Albany street and Massachusetts avenue; draining and surfacing grounds.

Installed refrigerating plant at Hospital.

1896–1897. Fire Service: Outdoor hydrants and indoor "stand pipes."

1896–1898. Electric Light Plant, and all buildings supplied with electric light.

1897–1898. Alterations in Wards S and H, Operating-rooms, Recovery-rooms, etc.

Acquired Nurses' Home site, ten estates purchased corner Massachusetts avenue and Harrison avenue.

Coal Pocket for 3,000 tons of coal, erected.

1897–1900. New Laundry Building and repairing and altering old laundry building.

"Ann White Vose Building," accommodating ninety-eight nurses.

1898. "Orderlies' Annex" (building rented at 717 Massachusetts avenue).

X-Ray room and apparatus organized under Medical Library.

Rooms in lower story of Pathological Building fitted up and equipped for photographic purposes.

1898–1899. Alteration and extension of Boiler House and three new boilers; installing mechanical draft, McClave grates.

1898. Carpenter's shop reorganized in basement of Pathological Building.

1899. March 21, fire at Convalescent Home due to faulty construction of the woodwork around the central chimney. Loss, $500.

1899–1900. Alterations and additions to Centre Kitchen (Wyman Fund).
Greenhouse reconstructed and raised.
Installing steam pipe conduit between Ward F and Vose House, including Nurses' Homes and Out-Patient Building.

1900. Elevator in Surgical Building.

1900–1901. Relief Station, Haymarket square (Wyman Building Fund).

1901. Alterations and Additions to Ward T (apartments for the Assistant Superintendent).
Garbage Destructor in Laundry Building.
Special Destructor for Pathological Building.
Storage Shed on Albany street.
Building Manure Pit.
Corridor to connect Nurses' Homes.
Handball Court (ex-House Officers paid $995 on account).
Housekeeper's rooms enlarged.
Relief Station completed and equipped. Opened February 20, 1902.
Medical Elevator installed.

1901–1903. Surgical Out-Patient Building; completed October, 1903; occupied, 1904.
New Wards, Pavilion III — Wards K, L and M, to replace old Wards K and L.
Brick wall, grading, draining and completing grounds at Nurses' Home.

1902. Garbage Destructor at Boiler House.
Equipping eight boilers with the economy smoke consuming device.
Widening Bridge between H and S, for open-air treatment.
X-Ray rooms fitted up in Hospital under Ward A.
Roof-Garden, Ward O, enlarged and equipped.
Fire in recreation house on grounds at Convalescent Home. Loss, $150.

1902–1903. Alterations of all plumbing, Wards F, G and H.
Fire in Ward E (renovated). Loss, $800.
Entire reconstruction of radiators, South Department.
One 72-inch horizontal tubular boiler installed and equipped.

1904. Bridge between D and O widened for open-air treatment.
Laundry Shelter.
Canopy over Medical Entrance.

1904–1905. Extensive repairs to Kitchen Refrigerators in Hospital and South Department.
Alterations in Medical Out-Patient Building.

1904–1905. Alterations of all the Plumbing in Wards B, C and D.

1905. Alterations in Gate Lodge, giving additional examining rooms, enlarging main office and improving the entrance, and building areas, South Department.

BOSTON CITY HOSPITAL PROPERTIES.

Assessors' Valuation, 1905.

	Area.	Value Land.	Value Buildings.	Total Value.
Main Hospital:				
Hospital	.....	.....	$594,000	
Nurses' Home	.....	.....	60,000	
Vose House for Nurses	.....	.....	100,000	
Medical Out-Patient Building	.....	.....	50,000	
Pathological Building	.....	.....	100,000	
Surgical Building	.....	.....	100,000	
Wards W and X Building	.....	.....	100,000	
Wards K, L and M Building	.....	.....	130,000	
New Surgical Out-Patient Building	.....	.....	115,000	
Totals, Hospital Proper	430,963	$536,000	$1,349,000	$1,885,000
Brick Stable and Coal Sheds	.....	.....	55,200	
Boiler, Engine and Dynamo Houses	69,785	88,000	25,000	168,200
South Department:				
Gate Lodge				
Administration Building				
Domestic Building				
West Pavilion for Scarlet Fever				
East Pavilion for Diphtheria				
Nurses' Homes, East and West				
Laundry, Mortuary and Chapel				
Totals, South Department	125,736	129,000	601,000	730,000
Relief Station	8,507	127,600	100,000	227,600
Convalescent Home:				
House and Ell				
Barn and Stable				
Shed				
Recreation House				
Totals, Convalescent Home	610,500	42,700	8,000	50,700
Totals, all Departments	1,245,491	$923,300	$2,138,200	$3,061,500

Recapitulation.

	Area.	Value Land.	Value Buildings.	Total Value.
Main Hospital Buildings	430,963	$536,000	$1,349,000	$1,885,000
Albany-street Wharf Buildings	69,785	88,000	80,200	168,200
South Department Buildings	125,736	129,000	601,000	730,000
Relief Station Buildings	8,507	127,600	100,000	227,600
Convalescent Home Buildings	610,500	42,700	8,000	50,700
Totals	1,245,491	$923,300	$2,138,200	$3,061,500

APPROPRIATIONS FOR NEW BUILDINGS, LANDS, ETC.,

(Annual Maintenance not included in this Schedule)

Passed by City Council from July 2, 1861, to February 1, 1906.

Original Buildings and Grounds :		
July 2, 1861, Loan order . . .	$100,000 00	
Dec. 27, 1861, " "	50,000 00	
July 23, 1862, " "	50,000 00	
March 28, 1863, " "	50,000 00	
Oct. 23, 1863, Order of Transfer . .	10,000 00	
Feb. 16, 1864, Loan order . . .	60,000 00	
Nov. 15, 1864, " " . . .	30,000 00	
June 7, 1865, " " . . .	59,000 00	
		$409,000 00
Administration Building.		
Ward Building F, G and H		
Ward Building B, C and D.		
Boiler House, Laundry and Autopsy-room.		
Porter's Lodge.		
Eight Horse Sheds.		
Iron Fence and Stone Foundation.		
Filling and Grading Grounds.		
Pavilion III, Wards K and L.		
Coal Shed on Wharf.		
Stable and Autopsy-room on Wharf.		
Fence east of Albany street.		
Lodge :		
1867, Transfer		17,200 00
Porter's Lodge rebuilt and Out-Patient Building added.		
Water Tanks :		
April 30, 1872, Order of Transfer		5,000 00
Iron Water Tanks.		
Additions to City Hospital :		
May, 1874, Appropriation		190,000 00
Ward Building Q, R and S.		
Surgical Amphitheatre, Wards N and O.		
Ward Building T.		
Ward Building P.		
Kitchen, Bakery and Ice House.		
Nurses' Home:		
May, 1884, Appropriation . . .	$40,000 00	
November, 1885, Transfer . . .	5,600 00	
		45,600 00
Furnishing Nurses' Home:		
May, 1885, Appropriation . . .	$5,000 00	
January, 1886, Transfer	737 68	
		5,737 68
Carried forward		$672,537 68

Brought forward		$672,537 68
Building for Contagious Cases:		
May, 1885, Appropriation . . .	$40,000 00	
July 8, 1886, Loan order	15,000 00	
May, 1887, Appropriation . . .	5,000 00	
Feb. 16, 1889, Loan order	6,156 01	
April, 1889, Transfer	1,105 77	
		67,261 78
Ward Building A.		
Ward Building E.		
Furnishing Contagious Buildings, Wards A and E:		
May, 1887, Appropriation		7,375 00
Building for Out-Patients:		
May, 1886, Appropriation . . .	$10,000 00	
July 8, 1886, Loan order	9,000 00	
May, 1888, Appropriation . . .	16,000 00	
Feb. 16, 1889, Loan order . . .	14,000 00	
March, 1890, Transfer	1,800 00	
		50,800 00
Medical Out-Patient Building and New Lodge (entrance changed from Concord to Springfield street).		
Convalescent Home:		
March 10, 1890, Loan order		30,000 00
Purchase of Asaph Churchill estate.		
Enlarging and Furnishing Convalescent Home:		
Oct. 17, 1890, Loan order		20,000 00
Medical Library:		
March 10, 1890, Loan order		17,500 00
Furnishing Medical Out-Patient and Lodge Building:		
November, 1889, Transfer		8,950 00
Additional Land:		
Oct. 7, 1892, Loan Order	$42,000 00	
Jan. 31, 1894, Transfer	13,820 29	
		55,820 29
Purchase of land corner of East Chester Park and Albany street from Devisee of William Evans.		
Surgical Elevator:		
Dec. 24, 1892, Transfer		4,000 00
New Buildings:		
Jan. 2, 1892, Loan Order	$136,500 00	
May 24, 1892, " "	135,000 00	
July 10, 1893, " "	400,000 00	
Feb. 1, 1894, " "	300,000 00	
July 12, 1894, " "	65,000 00	
Dec. 21, 1895, Transfer	33,500 00	
Oct. 6, 1896, Loan	45,000 00	
June 14, 1898, "	23,000 00	
June 27, 1898, "	38,500 00	
June 19, 1899, "	14,500 00	
		1,191,000 00
Carried forward		$2,125,244 75

Brought forward		$2,125,244 75
Stable and Ambulance Station.		
Boiler House, 1893–1894.		
South Department:		
Administration Building.		
Domestic Building.		
Lodge.		
West Pavilion for Scarlet Fever.		
East Pavilion for Diphtheria.		
Nurses' Homes, East and West.		
Laundry, Mortuary and Chapel.		
Pathological Building.		
Surgical Operating and Wards N and O Building.		
Ward Building, W and X.		
Ambulance Shed and Grading.		
Coal Shed, rear of Boiler House.		
Building Walls, Draining and Surfacing Grounds.		
Installing Refrigerating Plant.		
New Laundry Building.		
Enlarging Boiler House and Steam-heating Plant (1898–99).		
Fire Service:		
July 14, 1896, Transfer		4,500 00
Fire-escapes, Hydrants, In-door Stand-pipes, Extinguishers, etc.		
Furnishing Surgical Ward:		
July 14, 1896, Transfer		24,000 00
Nurses' Home Site:		
April 6, 1897, Loan		101,000 00
Purchase of Estates on Massachusetts Avenue.		
Coal-pocket:		
June 18, 1897, Loan		25,000 00
Electric Lighting Plant:		
Oct. 29, 1897, Loan		10,000 00
Partial cost.		
Hospital Buildings, Improvements:		
Feb. 27, 1899, Loan	$20,000 00	
Jan. 5, 1901, "	20,000 00	
May 3, 1901, "	48,000 00	
		88,000 00
Garbage Destructor, Laundry Building.		
Special Destructor, Pathological Laboratory.		
Manure Pit.		
Storage Shed.		
Handball Court ($995 paid by ex-House Officers).		
Carried forward		$2,377,744 75

Brought forward		$2,377,744 75
Garbage Destructor, Boiler House.		
Widening bridge between Wards S and H.		
Equipping 8 boilers with Economy Smokeless Furnace.		
Two Influence Machines, X-Ray.		
One 72-inch Horizontal Tubular Boiler.		
Completing Surgical Out-Patient Building.		
Completing Pavilion III Building.		
Furnishing Vose House for Nurses:		
Feb. 27, 1899, Loan		22,000 00
New Surgical Out-Patient Building:		
Jan. 5, 1901, Loan	$100,000 00	
Jan. 27, 1903, "	4,200 00	
Jan. 20, 1904, Transfer	370 38	
		104,570 38
New Ward for Isolated Patients, Pavilion III:		
Jan. 5, 1901, Loan	$120,000 00	
Jan. 27, 1903, "	7,000 00	
Jan. 20, 1904, Transfer	3,263 93	
		130,263 93
Wards K, L and M.		
Brick Wall, Grading, Draining and Completing Grounds:		
Jan. 5, 1901, Loan		13,000 00
Corridor to connect Nurses' Home and Vose House:		
Jan. 5, 1901, Loan		9,500 00
Medical Elevator:		
Jan. 5, 1901, Loan		4,000 00
Relief Station, Completing and Equipping:		
March 7, 1901, Loan		40,000 00
Furnishing Three New Buildings:		
Oct. 30, 1902, Loan		35,500 00
Furnishing Surgical Out-Patient Building.		
" Pavilion III Building.		
" Medical Out-Patient Building.		
Emergency Station, East Boston:		
July 22, 1905, Loan, Unexpended		30,000 00
Total appropriations		$2,766,579 06

HOSPITAL MAINTENANCE APPROPRIATIONS.

From May, 1864, to February 1, 1906.

1864,	7 months	$25,537 46	1886,	12 months	$177,306 27
1865,	12 "	66,789 04	1887,	12 "	178,949 32
1866,	12 "	76,262 92	1888,	12 "	203,206 46
1867,	12 "	77,642 97	1889,	12 "	218,287 82
1868,	12 "	97,701 02	1890,	12 "	255,738 11
1869,	16 "	124,482 78	1891,	13 "	273,157 28
1870,	12 "	107,826 78	1892,	12 "	255,610 49
1871,	12 "	113,371 05	1893,	12 "	266,703 13
1872,	12 "	119,669 99	1894,	12 "	261,538 03
1873,	12 "	111,198 31	1895,	12 "	284,417 92
1874,	12 "	118,539 15	1896,	12 "	341,331 14
1875,	12 "	114,545 98	1897,	12 "	374,193 75
1876,	12 "	136,302 92	1898,	12 "	387,527 74
1877,	12 "	131,102 14	1899,	12 "	407,505 00
1878,	12 "	125,521 00	1900,	12 "	433,672 74
1879,	12 "	120,185 00	1901,	12 "	445,291 50
1880,	12 "	130,864 00	1902,	12 "	472,873 54
1881,	12 "	145,708 94	1903,	12 "	476,857 20
1882,	12 "	152,499 27	1904,	12 "	486,994 50
1883,	12 "	154,334 88	1905,	12 "	486,776 88
1884,	12 "	155,499 45			
1885,	8 "	120,375 63			$9,213,898 60

The foregoing facts, figures and data bring the History of the Hospital to February 1, 1906.

II.

THE MUNICIPAL HISTORY OF THE BOSTON CITY HOSPITAL.

By John Bapst Blake, M.D.

The acts and statutes which create, foster and regulate a modern municipal hospital are always interesting, since they constitute the legal foundation of the institution, and make a sort of skeleton history of its birth and early years. They richly repay the drudgery of hunting through volumes of legislative proceedings, and delving into municipal records.

This somewhat archæological task was undertaken about five years ago for the Boston City Hospital, and appeared in the Alumni Catalogue of 1901 as a historical sketch. It is believed that every act and statute of any importance was discovered and examined, and the sketch contains at least a reference to all of them. Should any persistent student desire to consult the original text he will find here sufficient means of verification in all instances. The data were collected with the assistance of Thomas J. Hurley, Esq., who put all the volumes of Municipal Records at our disposal. Without this aid the task would have been impracticable.

This chapter is taken in large part directly from the historical sketch above mentioned, facts and figures of the past five years being added to it. In consequence, it must necessarily be lacking in startling incidents, since legislative acts rarely possess either ornamentation or picturesqueness.

The morning mists shall haunt the stony street;
The northern summer air is shrill and cold;
And lo, the Hospital, gray, quiet, old,
Where Life and Death like friendly chafferers meet.
—W. E. HENLEY.

In the autumn of 1849 Messrs. Putman, Martin and Crosby of the Boston Common Council, and Messrs. Grant and Ober of the Board of Mayor and Aldermen, were appointed a joint committee "to consider and report upon the expediency of establishing a City Hospital." Such is the record of the first action formally taken by the Boston City Government in relation to the creation of a general municipal hospital.

The committee made a report on November 12, 1849, recommending the continuing of the old Fort Hill Cholera Hospital as a city hospital. An order to this effect finally passed the Board of Mayor and Aldermen by a vote of five to three on December 20 of the same year. It was sent to the Common Council for concurrence and received one reading without opposition, but on December 27 it was referred to the next Common Council, on motion of Mr. Sampson, and thus effectively killed. The report of this joint committee (City Document No. 56, 1849) is extremely interesting. It speaks in complimentary terms of the Massachusetts General Hospital, but points out that in the previous two and one-half years seven hundred and thirty-one persons, or more than one-quarter of all applicants for treatment, were refused admission, either on account of lack of accommodations or for some other reason. Appended to the report are letters from Drs. John Ware, S. D. Townsend, D. Humphreys Storer, Henry G. Clark, Henry I. Bowditch, Charles E. Buckingham, S. Parkman, R. Girdler and N. S. Perry. With one exception, these gentlemen advocate unanimously the construction of a city hospital.

For seven years no further action was taken. In 1856 petitions from physicians and citizens were presented, praying the establishment of a hospital by the city. In 1857 Mayor Alexander H. Rice recommended in his inaugural address the establishment of such a hospital. On April 17 of

the same year a joint committee, "to whom was referred that portion of the Mayor's address relating to a Free City Hospital," reported at length. The committee reviewed previous actions, consulted many physicians and prominent citizens,

HON. JOHN F. FITZGERALD,
Mayor of Boston, 1906.

and held a public hearing at which "gentlemen whose voices are rarely heard in public, but who on this occasion felt it their duty to express their convictions," advocated the measure. The report compares Boston and foreign cities in the matter of hospitals, much to the detriment of the former, and enclosed two appendages — one signed by all the prominent

physicians, and the other by the officers of the various charities and societies — urging the necessity of a hospital.

"In closing this report the committee cannot refrain from alluding to the unanimity with which this measure is regarded by our citizens generally. Few subjects probably have ever been presented to the consideration and action of the city government on which the expressions of public sentiment have been so universally favorable. No opposition has been manifested; none apparently exists. No argument has been attempted; none seemed to be required. And the committee have presented a simple statement of facts which, they are confident, will appeal to the heart of each and every member of the City Council, whose own experience and conviction will furnish them with good and sufficient reasons for sustaining this measure, so necessary for the comfort of the suffering, for the reputation of the city and for the honor of its government."

With these views the committee earnestly and unanimously recommended the passage of the accompanying resolutions and order:

"*Resolved*, That it is the opinion of the City Council that it is expedient and necessary that a city hospital should be forthwith established, in conformity with the views expressed by his Honor, the Mayor, in his inaugural address.

"*Ordered*, That a joint committee be appointed to examine and report whether any building available to the city can be appropriated to the purposes of a city hospital; and, if not, also to report what site within the limits of the city would be most eligible [for the erection of such a Hospital], and the probable cost of the same." [City Document No. 37, 1857.]

This committee seems to have been requested by the City Council to continue and to follow out its own orders. At all events, it reported again, on October 12, that it had visited buildings and considered localities, and decided to recommend the purchase of the Boston Lying-in Hospital on Springfield street. The estate contained 40,000 square feet of land and a new brick building, and the owners were "willing to dispose of it to the city at a great sacrifice on the original

cost." A bargain of this character was obviously too good to lose, and the committee offered an order authorizing its purchase by the city "at a sum not exceeding $45,000," and directing how the payment should be made. This order passed the Common Council unanimously on the same day (forty yeas, no nays), and was read and concurred (yeas, nine; nays, three) by the Aldermen. A motion to reconsider was made and laid on the table, and on October 19, 1857, the motion for reconsideration was taken from the table and rejected, and on the same day the Mayor approved the order. [This property is now the Home for Aged Men, on Springfield and Worcester streets, between Shawmut avenue and Tremont street.]

On November 16, 1857, the Committee on Ordinances was requested by the Aldermen "to prepare an ordinance for the care, government, and management of the City Hospital, recently established by a vote of the City Council." This was concurred in the Common Council three days later, and approved by Mayor Rice on November 24. It created a "Board of Trustees" of eight persons, and gave this board powers of management, of appointment of medical and surgical staff, and of superintendent and subordinates. It states that the hospital is "for the reception of those who require temporary relief during sickness," though the trustees might admit other persons temporarily. This ordinance was never put into force, yet, in a more or less modified form, it remains a basis for all that have since appeared. [City Document No. 78, 1857.]

This property was actually bought by the city, though apparently against the desires of some of the taxpayers. And at this point we are brought face to face with the fact that what are now called the tricks of modern politics were not totally unknown to our forefathers. The objecting taxpayers were a little afraid that the presence of the hospital might tend to the spread of disease in the South End, but they were apparently much more afraid that it would cause a fall in the price of real estate. Being menaced, therefore, with serious peril both to their health and their pockets, and despairing of influencing the city government, they suc-

ceeded, on March 27, 1858, in having passed a special statute, in relation to Boston, by the Massachusetts State Legislature, which authorized the city to build and maintain a hospital and the Council to appoint trustees for the same (all of which had been done four months before); and then in a brief and almost unnoticed provision of one and one-half lines "prohibits the erection or location of said hospital within three hundred feet of any school or church now built." The Springfield street property adjoins a schoolhouse, and the embryonic City Hospital was thus aborted, as one might say, not inappropriately in the very lap of the Lying-In Establishment; and two years elapsed before Boston, at the suggestion of Mayor Lincoln, conceived another hospital.

More than two years elapsed before Mayor Lincoln, following in the footsteps of Mayor Rice, vigorously commenced the work once more. At this time the effort took somewhat the form of a "merger" sufficiently familiar to us of the present day, and strangely enough it was doomed to suffer the fate of not a few of the modern examples.

Following the recommendation in Mayor Lincoln's inaugural, a joint committee was appointed, "to whom was referred so much of the Mayor's address as relates to a Free City Hospital." This committee reported on July 30, 1860. Their report stated that Dr. Henry G. Clark had prepared a plan by which the city's interests, those of the Boston Dispensary and those of the old Boston Lying-In Hospital on Springfield street, should be consolidated. At this time, however, the city had no funds, the Trustees of the Boston Dispensary decided that they could not delegate their trust, and the Trustees of the Lying-In Establishment considered it "inexpedient to merge their existence or their property in any other institution." Dr. Clark's plan, therefore, did not materialize.

At this rather discouraging point of the proceedings this same committee was directed to consider the terms of the bequest of the late Elisha Goodnow by a vote of the City Council. The committee had already decided that the South End of the city was the proper place for a hospital.

Mr. Goodnow's will, in brief, left the bulk of his estate, and the accumulated interest thereon, to the city to establish a hospital within the limits of the eleventh or twelfth wards. The committee therefore recommended that at least two acres of the city's lands in the "South Bay territory" be set apart for a "City Hospital," and that a joint special committee be formed "to take possession of and sell the Goodnow estate and to invest the proceeds as a City Hospital fund as required by the will of the late Elisha Goodnow, approved by Suffolk Probate Court, August 11, 1851." [City Document No. 67, 1860.]

This order was passed by the City Council December 24, 1860, and the committee was called the Joint Standing Committee on the Free City Hospital.

The will of Elisha Goodnow is given in full in City Document No. 63, 1860.

The Joint Standing Committee on the Free City Hospital reported in the Common Council on June 6, 1861. This report dealt mainly with the situation and the working plans. In 1860, about four acres of land on Albany street, extending towards Harrison avenue, was assigned by the Board of Land Commissioners, with the approval of the City Council, for the site of the proposed hospital. Many members of the city government favored a more central location, and as the committee itself and the city and consulting physicians agreed to this, an attempt was made to change the location to Malden street. This could not be done, however, and it was finally decided to retain the Albany street lot, extend it to Harrison avenue, and increase it to about seven acres. This is the present position of the Hospital. The committee had advertised for plans, and fourteen were offered. After long consideration, they decided to recommend those of Mr. G. J. F. Bryant. The committee offered the following:

"*Ordered*, That the Committee on Public Buildings, in concurrence with the Joint Standing Committee on the City Hospital, be directed to erect suitable buildings for a city hospital on a site selected for that purpose on Harrison avenue at a cost not exceeding $100,000."

This order was one week later modified by the addition of

the words "in general accordance with the plans of G. J. F. Bryant, to which a premium has been recently awarded by said committee." This was added by the Council upon the request of the committee for more specific orders in regard to a plan. It was presented to the Council on June 13, 1861.

The original plan of Mr. Bryant embraced a central building and six separate pavilions, arranged in pairs, radiating from the central structure, and attached to it by covered walks. The committee's report and the description by the architect of the original plans from City Document No. 34, 1861, and the order given above, was passed by the City Council in July, 1861.

These original plans arranged for the Hospital front and entrance on Springfield street. It was the opinion of the Hospital Committee, however, that the front should be towards Harrison avenue, and that only the centre building and two of the proposed six pavilions should be at first erected. This change required some time, and it was not until September 9, 1861, that the first shovelful of earth was removed for the excavations of the foundations. Before the end of 1861 "the piles were driven, the foundations laid, and the granite for the basement story quarried, hammered and delivered."

The four other pavilions provided for by the original plans were never built, and the present group of structures came into being one by one, as the needs of the Hospital became imperative.

It is perhaps a cause for regret that a comphrehensive scheme of development, providing for gradual extension, could not have been formulated at an early period of the Hospital's existence. Yet so great have been the advances and changes in the ideas controlling modern hospital construction, that such a plan may well have been impracticable; and there is a certain picturesqueness in the present group of wards that might have been lacking in a more formal plan.

On November 10, 1862, the Hospital Committee made a report of progress, which contains the best, if not the only accurate, sketch of the man who gave the original endow-

ment to the Municipal Hospital of Boston. For this reason the following paragraphs seem worthy of being quoted:

"As a very reasonable curiosity at some future day may be led to inquire who were the persons whose names are inscribed upon the walls of the Hospital as entitled to be remembered by future generations, what is known of the earliest contributor to its resources should perhaps be mentioned.

"Mr. Goodnow was born June 29, 1794, in the town of Sudbury, where his family settled in the earliest colonial times and have since become numerously multiplied. His earlier life was passed in his native place, occupied after his school days with work upon a farm. At the age of twenty-one he made a voyage to the Mediterranean, visiting afterwards England and Germany. Not finding his tastes suited to sea life, upon his return he engaged in business and was sufficiently prosperous. December 11, 1828, he married Jane R. Hunter, of Topsham in Maine, and resided on his property in Cross street, which he bequeathed to the city. His health not being vigorous he removed, with the hope of improving it, to a farm which he purchased, pleasantly situated in Watertown, adjoining the Pratt estate, where he remained till 1849. He thence removed to South Boston, and died there June 18, 1851. He was forced by the delicacy of his constitution to be prudent of his health; but he was active and enterprising in his employment — that of a produce merchant in the market — and was highly esteemed by those who knew him for his good sense, judgment and integrity. He was modest and unostentatious, making many friends and few enemies. He had no children, and in giving his accumulated substance to the public he did not neglect a liberal provision for his widow, now residing at South Boston, or disappoint his heirs, who were all in comfortable circumstances.

"It is often interesting to trace the origin of an idea fraught with such valuable results as this generous donation to the city. In September, 1821, immediately after it was first opened for the reception of patients, Mr. Goodnow was admitted as its second patient into the Massachusetts General

Hospital. He remained there several months, undergoing an operation for the stone, the first operation, which could be so called, within its walls. To Dr. Warren, who performed it, he ever afterwards felt a lively sense of gratitude for the considerate care which was taken of his case by that eminent practitioner and for the relief afforded him. The benefit of such an institution to the community, impressed upon his mind by his own experience and the kind treatment received while he was its inmate, and subsequently even more forcibly by his observation of its importance to persons in moderate circumstances, unable to command at home or in boarding-houses the care and comforts needed in illness, doubtless led to that wise disposition which he made of his property. It is to be hoped that other persons similarly circumstanced will emulate his example, by consecrating to the cure of the poor and needy a portion of the wealth with which Providence has blessed them." [City Document 74, 1862, p. 10.]

Through the kindness of Francis Blake, Esq., one of the Trustees of the Massachusetts General Hospital, a copy of the clinical record of Mr. Goodnow has been obtained. He entered on September 28, 1821, being, as the quotation above says, the second patient admitted. A small stone was found by sounding, and after several consultations the first operation of the Hospital was its removal by the perineal route upon October 18. Mr. Goodnow made a slow but steady convalescence, and was discharged December 31 of the same year. The record is one of great length; full description of instruments, preparation, arrangement of patient and assistants, dressings, and the intended technique, precede an elaborate description of the operation itself. It would certainly not suffer even in comparison with the records of to-day. The hand and foot on each side were tied together and held by an assistant. The patient was previously fortified by generous doses of laudanum, and was given one hundred and eighty drops of tincture of opium in the five hours following the operation, which itself lasted but "a few minutes." As might have been expected, "the patient expressed great pain in every part of the operation." If

space permitted, this most interesting record would be quoted more at length.

After reading the vivid description of this operation, the "first blood" drawn in the vigorous youth of our oldest Hospital, and remembering its remote results forty years later, the reflection cannot be avoided that the ways of Providence at times move through channels both devious and unexpected; for, in this instance, a small vesical calculus seems to have been destined to become, as it were, the very corner-*stone* of a new and at that time unthought-of institution.

A new Hospital ordinance was passed on December 23, 1862, amended June 24, 1863, and further amended April 5, 1864, and still further amended December 15, 1866.

The ordinance of 1862 created a Board of Trustees of "eight suitable persons," elected by concurrent vote of the City Council, three of whom should be citizens at large, two members of the Board of Aldermen, and three members of the Common Council — Aldermen and Councilmen to have a term of one year, citizens a term of three years. The trustees were to make rules, appoint a staff, a superintendent and subordinates, and supervise property, funds and estates given to the Hospital. The amendment of 1863 referred mainly to gifts and bequests; that of 1864 was of more importance, though very brief; it declares that the City Council, "whenever they see cause, may remove any of the persons appointed by the trustees." The amendment of 1866 increases the Board of Trustees to nine — one Alderman, two Common Councilmen and six citizens at large — the terms of service remaining unchanged.

In accordance with this ordinance, the first Board of Trustees was elected by the Council in January, 1893, more than a year before the Hospital was completed. It obtained information in regard to management of similar existing institutions, and instituted inquiries in regard to furniture and fittings. It found, within its own body, a gentleman who accepted the position of the first superintendent. It nominated a staff of Consulting and Visiting Physicians and Surgeons, "which appear to have given universal satis-

faction." Two of these gentlemen, Drs. John C. Dalton and John Ware, died before they could assume their duties.

A little more than two years were required to complete the buildings. Considering the fact that the country at large was plunged in the Civil War, and that the difficulties and expenses of the actual construction were much greater than had been anticipated, this building period compares at least favorably with that of other municipal work. The cost was rather more than twice the original estimates, a statement to which our Twentieth Century ears are not unaccustomed. The Hospital was dedicated on May 24, 1864, and the first patient was admitted on June 1.

The dedication was conducted with considerable ceremony, and the order of exercises was as follows:

I. Introductory by the choir.
II. Remarks by Alderman Davies, Chairman of the Committee on Public Buildings, surrendering the Hospital to Mayor Lincoln.
III. Remarks by the Mayor, delivering the keys to the Board of Trustees.
IV. Response of Otis Norcross, President of the Board of Trustees.
V. Prayer by Rev. William S. Studley.
VI. Address by Thomas C. Amory.
VII. Hymn.
VIII. Benediction.

These proceedings, with a preface, the first Annual Report, the Hospital Roster, etc., have been collected into a volume published by the city in 1865. Two wood-cuts of the Hospital as it appeared at that time are included in the volume, one of which is here reproduced in a reduced form. This book is now out of print, and is not easy to obtain, and free use has been made of its contents in this sketch. The remarks of the various officials, and particularly Mr. Amory's address, are extremely interesting, and will repay any one the trouble involved in a search for the volume. The quotations which follow are typical of the entire address from which they are taken:

"Our people, our whole people, all that especially constitutes us an enlightened, charitable, religious community, having through their constituted authorities constructed this Hospital, now consecrate it upon the altar of Christian humanity. If in gloom and despondency we laid its foundations, if in uncertainty and tribulation we erected its walls, what more suitable oblation can we now offer, with grateful hearts, when we are again permitted the hope of possessing our country undiminished, our liberties unimpaired?

"Be it ever remembered in connection with our history that there has not been a single vote in opposition or objection made to any appropriation for the Hospital. But it has been from the beginning, and no doubt will continue, an object of affectionate regard with the City Council.

"A numerous and intelligent portion of our people believe in the views of Hahnemann, that what produces disease will cure it, and that there are specifics of which infinitesimal doses will restore the health, however much disturbed. They have requested part of our buildings for their patients and practice, under charge of their own physicians. The petitioners are men of character, taxpayers, entitled to consideration; but such radical differences of professional opinion exist between their practitioners and the regular faculty that any attempt to combine both methods of cure under the same roof must inevitably lead to contention. Far better for the city treasury to contribute at some future day in aid of a separate establishment.

"Electricity, hydropathy, hot and cold, mild and heroic, Thompsonianism, Indian herbs and simples, all have their advocates as sovereign remedies, as universal panaceas. Some even have faith, as modes of cure, in clairvoyance, mesmerism, spiritualism, and manifold other popular fallacies. The proposed practice here, while sanctioned by the government, will be that taught in our university, followed by the larger number of our faculty and by the leaders of professional science in all civilized countries. Our Medical Board are competent to determine the efficacy of new methods and sufficiently independent to put them to practical use when approved. If in a popular institution all opinions are

to be treated with respect, the authorities as constituted are responsible and must decide what can be safely adopted. When, in their judgment, baths, electric currents or patent medicines will soothe pain or drive away peccant humors from the blood, no bias or preconceived notion will be permitted to stand in the way of their application. Patients requiring other treatment than that provided here must seek it somewhere else. We need feel but little apprehension that our wards will remain idle."

"The name of Elisha Goodnow, as well as that of Lawrence Nichols, also on our roll of benefactors, will stir the hearts of other men to like generosity. Whoever would lay up treasure in heaven will give freely here to the sick and feeble. Let them remember that famous epitaph of Old England on the tomb in the ancient church at Tiverton:

> "Hoe! Hoe! who lies here?
> 'T is I, the good earl of Devonshire,
> With Kate my wife to me full deer:
> We lyved together fyfty-fyve yeere.
> That wee spent wee had.
> That wee lefte wee loste.
> That wee gave wee have."

When the Hospital was opened for patients on June 1, 1864, it consisted of a Medical, Surgical and Ophthalmic Department. The North Pavilion was used exclusively for surgical and the South Pavilion for medical cases, as at present. Ophthalmic cases were placed in the upper rooms of the central building, and out-patients were treated in what is now the basement of Ward B. Operations were done in the original operating theatre in the dome.

From the opening of the Hospital in 1864 the story is one of uninterrupted and consistent growth in every direction. Every element which entered into the original institution has increased, and in all three dimensions of space. New departments, among others a new and complete Hospital, have been added, and the ratio of growth in the number of patients has been paralleled by the increase in the personnel of the staff

and in the Hospital buildings. Beside the many new departments, all the old ones have been continued and enlarged.

A single part of the whole has not increased in actual numerical size; this is the Board of Trustees. As originally created in 1863 it consisted of eight persons — two Aldermen, three Councilmen and three citizens at large — elected by the City Council. Since that time it has been modified in three ways: it has decreased in numbers, except for one period after 1867, when it consisted of nine persons; the number of members chosen from the City Council has steadily been diminished to zero; and finally, the method of election by the Council gave way to appointment by the Mayor. These changes all tended towards a more compact and efficient board, and one uninfluenced by anything except the best interests of the institution. In 1867 the board was changed from its earliest form to one Alderman, two Councilmen and six citizens at large. In 1880 it was incorporated by the State Legislature and reduced to seven members — five to be citizens at large, not members of the City Council, and appointed by the Mayor, and one Alderman and one Councilman, elected by the Council. In 1885, under the new city charter, the members from the Council were abolished and the board reduced to its present numerical size, all appointments by the Mayor, for term of five years, no members of the City Council being eligible. The powers of the trustees have not been modified; indeed they have been increased by the removal of restrictions which went hand in hand with City Council membership.

The first superintendent was not a physician, and the title "Admitting Physician" originally appears under the Medical and Surgical Staff. In July, 1872, Dr. Edward Cowles was made superintendent, and in October of the same year the superintendent was also made admitting physician. In June, 1879, Dr. G. H. M. Rowe was appointed. Until 1885 there was only one assistant to the superintendent. In that year a second was appointed, and in 1893 a third was added, their titles being Assistant Superintendent, First Executive Assistant and Second Executive Assistant.

There were at first two medical and two surgical services, distinguished from each other by the names "North" and "South." The beds in each ward were divided equally between them, those on one side of the ward belonging to the North and on the other side to the South service. On the medical side the first visit was made by Drs. J. G. Blake and Borland, the wards being filled with vacant beds. Before many days, however, there was a demand for even cots in the corridors. In 1878 a "Nervous and Renal" service was added, and in 1886 this was abolished and the three numbered services were established, as they continue to-day. The Department for the Diseases of Women was created in 1892. There are at present six visiting and three assistant visiting physicians.

The Medical Out-Patient Department was established in 1866, Dr. C. W. Swan being the first physician to out-patients.

On the surgical sides Drs. Cheever and Stedman made the first visits on June 1, 1864. On the first Friday in June, being the first public operating-day, Dr. Cheever did the first surgical operation in the amphitheatre in the central dome at 11 A.M. It was an adult male with cancer of the commissure of the lips and cheek; excision and repair constituted the operation. Dr. Gavin assisted as house surgeon, and Dr. C. J. Blake made a water-color drawing of the diseased parts. The same morning Dr. H. W. Williams operated for cataract and other operations.

The two surgical services remained unchanged until July 1, 1890, when a third was added, and, as on the medical side, the old names, "North" and "South," gave place to the present numerical designation.

Until July, 1867, the Visiting Surgeons saw and treated out-patients. On that date the position of Surgeon to Out-Patients was created, and Dr. Francis C. Ropes was the first appointment.

The surgical out-patients were treated under Ward B, *i.e.*, Ward A. The room nearest Harrison avenue was the waiting-room. Next came the out-patient surgeon's consulting-room; next, a small room for special examinations (it was a common thoroughfare); then the large accident-room, dark

and inconvenient, with a small splint-room and instrument-room. In those days the instruments could be put into a pretty small bag. The last room on that side of Ward A was occupied by Mr. and Mrs. Prentiss, who took care of Wards A and B. The accident door was underneath the present corridor, leading from Ward B to the left to the new Surgical Pavilion.

There was an Ophthalmic Out-Patient Department from the beginning. Then came, as already described, the establishment of the Medical Out-Patient, in 1866, and the Surgical, in 1867. The next to appear was that for Diseases of the Skin, in 1868, Dr. H. T. Damon; for Diseases of the Ear, in 1869, Dr. J. Orne Green; and for Diseases of Women, 1873, Drs. W. E. Boardman and J. R. Chadwick. In 1876 the departments for Diseases of the Nervous System and Diseases of the Throat were created, under the charge of Drs. S. G. Webber and E. W. Cushing, respectively. Since that time no new departments have been added, though the out-patient staff has, of course, increased very greatly in numbers.

The position of pathologist was created with the original staff. It has been held successively by Drs. C. W. Swan, S. G. Webber, W. P. Bolles, E. G. Cutler, W. W. Gannett, H. F. Sears and W. T. Councilman. The present palatial Pathological Laboratory has sprung apparently from the proverbial mustard-seed, for the location of the original research-room of the first pathologist, history fails to record. The size of the department itself has increased tenfold, holding the Hospital record for rapid growth, and presenting the most imposing array of titles upon the roster.

The first report of the trustees states that "the nucleus of a library has been formed through the kindness of donors, whose names will be found in the Report of the Superintendent." At present there is a series of small libraries attached to the various wards, and containing several hundred volumes, intended for the use of the patients; and the Medical Library proper contains 3,696 volumes, 558 periodicals and 2,022 pamphlets (1901).

The reports of the trustees, including the Superintendent's reports, have appeared annually since 1864.

The medical and surgical reports, published by the staff, have appeared in series. Each of the first five series covered a space of five years, or a little more, but since 1894 they have appeared annually.

The Hospital consisted, at the time of dedication, of three main structures — the central building and the two pavilions. There were also a boiler-house, a small gate-house and horse-sheds. At present the buildings number thirty-five, including, of course, several of the original ones. In their first report the trustees apparently established the precedent of asking for new buildings, and it has remained a rule which their successors have rarely broken; and it is certainly true that, though occasionally temporizing, the City Council has honored these requests with a liberality hitherto unknown even in the cities of the United States. The additions to the Hospital since 1861 are as follows:

1865. Wards K and L, a stable and a small morgue and autopsy-room were built, and in the following year a new Smallpox (and Cholera) Hospital was erected on the land east of Albany street.

1867. The first lodge and out-patient building was commenced and finished in 1868. The boiler-house, morgue and autopsy-rooms were enlarged in 1871. In 1874 an entrance was made from Albany street, the scales (near the present laundry) and a small greenhouse completed, and a gardener appointed to take charge of the grounds.

1869. In the summer two tents were erected for surgical cases. They were blown down by a gale in September. Later they became a regular feature in summer, and reached their highest development in 1898.

1870. "The institution was crowded to its utmost capacity." A new amphitheatre and accident-room were asked for, and even a Convalescent Home requested.

1872. The old Smallpox Hospital was discontinued.

1875–76. The then new surgical and medical buildings, the kitchen and Wards P and T were built. The surgical building contained the accident-room, the amphitheatre and Wards N and O. The kitchen up to this time had been under the centre building. The capacity of the Hospital, originally 168 beds, and already increased by the addition of K and L, now numbered 375, and after this time the beds in the basement of the Medical and Surgical Pavilions were discontinued.

1877. The first ambulance was installed.

1878. The training-school for nurses was established, though the Nurses' Home was not built for many years.

1881. The Hospital again became so crowded that there were beds in the corridors, and in the next year the trustees declined further responsibility in contagious cases and declared that the out-patient building was entirely inadequate.

1884. Money was appropriated for the Nurses' Home, which was finished in 1885. Hospital capacity then became 425, as the nurses had heretofore lived in the Hospital. In this same year the appropriation for Wards A and E for contagious diseases was passed, and these were finished in 1887.

1886. Petitions were received by the trustees praying "Homœopathic treatment should be furnished at the Boston City Hospital for those desiring it." The trustees, after considering the matter carefully, and remembering in all probability the address at the dedication of the Hospital, decided that it was "inadvisable." [See Trustees' Report, Boston City Hospital, for 1886.]

1888. Hospital capacity, 485 beds; tent service in summer, 72 beds; total possible capacity, 557 beds. City Hospital Alumni Association organized.

1889. The new lodge and medical out-patient building was erected and opened.

1890. The Convalescent Home was also opened — situated in a lot of fifteen acres in Dorchester.

1891. The new library building and house officers' dining-room was finished, and the old lodge was renovated for the Surgical Out-Patient Department.

1892. A temporary Pathological Laboratory was installed under the library building. The new South Department was commenced. The new Ambulance Station was finished.

1893. The Hospital exhibit at the World's Fair received a special prize.

1894. Boston City Hospital Medical Club organized.

1895. The South Department was opened, and the Pathological Building, with the adjoining Mortuary and Chapel, was completed.

1896. New small operating-rooms occupied, and Wards X and W completed. On Thanksgiving Day, Dr. Cheever opened these rooms by an operation and a short address.

1897. The Surgical (and Gynæcological) services were modified, discontinuing the title Out-Patient Surgeon and creating Senior and Junior Visiting Surgeons and First, Second and Third Assistant Visiting Surgeons. Electric-light plant and coal-pocket installed.

1898. New boiler-house completed. Surgical amphitheatre and Wards N and O occupied. Hospital capacity eight hundred and twenty-eight beds. The new amphitheatre was formally opened by the trustees, many members of the City Council being present. One week later the first operation was done by Dr. Cheever in the presence of the staff and a large number of invited medical guests. In the summer of this year the temporary Field Hospital was established on the vacant land near the Pathological Laboratory. It consisted of tents and small wooden structures, hence its name "Shantiago." Its total capacity was one hundred and sixty beds, and the total number of soldiers treated was six hundred and two. The X-Ray apparatus was installed.

1899. New laundry occupied.
1900. New Nurses' Home, Vose House, completed and occupied. New kitchen finished. Relief and Ambulance Station in course of construction.
1901. New Surgical Out-patient Building, and new K, L and M wards.

This rapid growth in buildings has been accompanied with many changes of location of some departments. Contagious diseases began in Ward K, moved to Ward A and E in 1887, and to the South Department in 1895. The operating theatre has also had three different locations. Surgical out-patients have, however, been shifted around more than any of the others. In 1864 they were treated apparently in or near the wards. When the Out-Patient Department was organized, they were given Ward B (basement). In 1868 they moved to the old lodge, and in 1876 to the basement of the (then) new surgical building, under the accident-room. In 1891 they moved back again to the old lodge, renovated and devoted solely to them; and now, having outgrown successively every building assigned to them, they, together with the surgical specialties, Gynæcology, Nose and Throat, Ear and Eye, and Diseases of the Nervous System, are now installed in the latest new building, which occupies the site of the original lodge-gate, and will probably be large enough to meet the demands of the next five years.

Clinical Records. — These are complete from June 1, 1864. They show that the first surgical patient was admitted on that date, with an injury to the toe; the first ophthalmic patient, upon the same date, with a "disease of the eye"; and the first medical patient, on June 2, with bronchitis and general debility.

The first operation with complete antiseptic precautions, including the spray and the formal Lister dressing, was done by Dr. Gay, in Ward P, in 1878. It was an amputation of a toe, and the result was satisfactory.

"Vital signs charts" appear in the Record-books in December, 1870. The present temperature charts appear in 1874.

VISITING AND HOUSE STAFFS.—The original Medical and Surgical Staff consisted of eighteen members, of which one-third were consulting physicians and surgeons. The present complete staff consists of ninety members, of which only one-twenty-third are consultants.

The original House Staff consisted of four internes and one (ophthalmic) externe. There are now forty-seven in all. Until 1869 there was but one interne for each service.

In 1869 one more interne was added on each side, giving each service one and one-half; and in 1874 the number was increased on the medical side, so that each service had a junior and a senior. In the following year all services in the Hospital were given three men, and the term of service made eighteen months; up to this time it had been one year. In 1894 a clinical clerk was added to each medical and a surgical dresser to each surgical service. In 1897 the clinical clerk was abolished, a fourth house officer was added to each service, and the term lengthened from eighteen to twenty-four months. In 1899 a change was made by which each house officer as he enters the Hospital from the out-patient spends the first six months of his house service on the side opposite from that to which he has been appointed; the surgical externe becomes medical junior, and then returns to be surgical senior and house surgeon.

Before 1896 house officers roomed in various parts of the Hospital. Since the opening of the new surgical building they have lived together, a happy family, in the quarters of the house staff, occupying most of the second and third stories on the eastern side of the building. The sitting-room on the second floor, though small in proportion to the numbers who may desire to use it, is a great improvement upon the original sitting and reading room established for the internes in 1889, and situated under Ward P.

One of the many dramatic elements of the internes' service was eliminated by the foundation of the "jump," or contagious service, in 1890. Until this time, but particularly in the days before Wards A and E were occupied, the necessity of an emergency trachæotomy was made known by a great gong which was placed in the surgical corridor,

opposite the door leading to Ward B. At the sound of this gong every interne who could possibly do so raced at top speed to K and L, and the one who arrived first frequently did the operation, no matter on which service the case might be. It was literally a race with death. After 1890, however, a senior and junior lived in Ward E for one month, twice during their term. Their places on the regular service were taken by the "jump" internes, who substituted successively on the three surgical and the three medical services.

About 800 patients received treatment in the Hospital during its first year, and 11,490 were treated in all the departments in the fortieth year. The number of out-patients increased in even greater ratio. Six hundred were treated the first year, and over 60,000 the last year. The total number of house patients for the forty years was 225,497. The out-patients foot up to 590,769. The increase in numbers in decades is shown in the following table:

Year.	Admitted to Hospital.	Out-Patient.
1864. (7 months) . . .	475	371
1874	3,424	8,752
1884	4,832	12,005
1894	8,064	18,073
1903	11,490	60,730

The total number of patients, added to the total officers and employees, constitutes what might be called the "Hospital Community." On Thanksgiving Day, 1900, this community numbered 1,261. That number of individuals had their meals within the Hospital on that day. If to this be added the five members of the Board of Trustees and the seventy members of the Medical and Surgical Staff, the final total of individuals connected with the Hospital on November 28, 1900, is 1,336. It is interesting to note that this is almost twice the number of patients, and is a number in excess of many townships in Massachusetts.

We have glanced at the Hospital of yesterday and of to-day, and we cannot refrain from wondering, what it will

be to-morrow? How great will be its scope, its influence and its extent when the next generation come to visit it, and walk its stately wards? To prophesy is an idle task. Already more than once has the reality outstripped the imagination. But of some things we may be certain — the traditions that are now sprouting sturdily about its walls will not be permitted to languish or to wither; the energy, loyalty, intelligence and success of its early workers will not be found wanting in its younger sons; and the ideals that inspired its foundation and its tender years shall not be obscured nor forgotten in its maturity. And more than this we need not wish for the City Hospital of Boston.

Refuge of sufferers! Conqueror of pain!
Healer of wounds, and woes and misery!
Bleeding or sick, the people turn to thee,
Seeking thy touch to make them whole again!
Standing within the city's southern gate,
Stretching wide open arms to all who need;
Sleepless, thou welcom'st every race and creed,
Spring time or autumn, early hour or late.
We are thy sons; each one in his own way
Gave of his best to thine abundant store,
And in thy service found, as children may,
Knowledge, strength, skill they knew not of before.
Loving, we watch thee grow from day to day,
Knowing thy name is blessed evermore!

III.

HISTORY OF THE SOUTH DEPARTMENT, BOSTON CITY HOSPITAL, INFECTIOUS SERVICE.

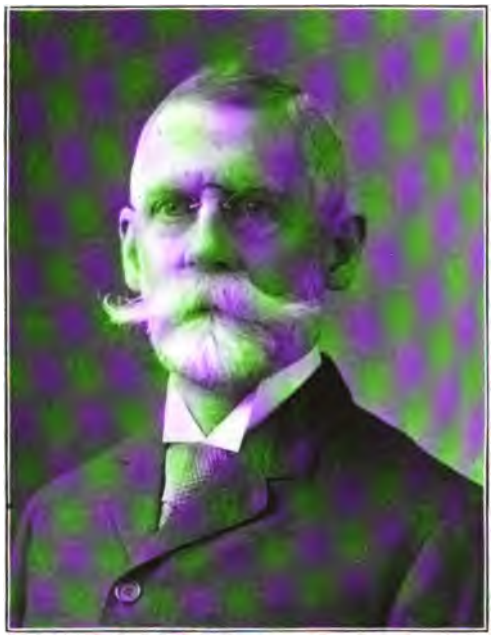
By John H. McCollom, M.D.,

Physician for Infectious Diseases, Boston City Hospital. Resident Physician, South Department, Infectious Service. Assistant Professor of Contagious Diseases, Medical Department, Harvard University.

Before commencing with the history of the South Department it may be of interest to take a glance at what has been done in England in the past thirty-five years in the establishment of special hospitals for infectious diseases. More than one hundred years ago smallpox hospitals were established in nearly every large city, because the fear of smallpox was much greater than that of any of the other infectious diseases. About thirty-five years ago Glasgow, which had suffered more than any other city from diphtheria, scarlet fever and measles, established the first fever hospital for the treatment of these diseases. When in 1862 an act was passed for the establishment of a fever hospital in Glasgow there was the greatest opposition from the property owners in the immediate neighborhood. A beginning was made in the winter of 1864, and a pavilion hospital of wood on brick foundations was erected, furnished, and opened with a capacity of 136 beds on April 25, 1865; this was the first Municipal Fever Hospital. At that time the population of Glasgow was 428,123, and previous to the erection of this hospital there were no accommodations for patients ill with diphtheria, scarlet fever and measles. These diseases ran riot in the crowded tenement houses. Isolation was impossible; whole families would be swept away by either diphtheria or scarlet fever.

Boston at that time, with a population of 192,318, had no provision for infectious diseases, other than smallpox. The

effect of the first municipal hospital at Glasgow, which, as has just been stated, was opened on April 25, 1865, was such in diminishing the death-rate from infectious diseases that a large estate was purchased for hospital purposes. On this estate was erected a pavilion hospital, capable of accommodating some four or five hundred patients. There was also a laundry and disinfecting plant where bed linen used by patients ill with infectious diseases treated at their



J. H. McCollom, M.D.

homes could be sent to be disinfected and washed. The hospital itself was opened the latter part of 1870, and is known as the Belvidere Fever Hospital of the City of Glasgow.

The health authorities of Glasgow, not satisfied with the hospital accommodations at Belvidere, because they were unable at certain times of the year to give each patient 2,000 cubic feet of air space, and because they were unable to vacate certain wards for six months for purposes of disinfection and renovation, decided to purchase land for a second fever hospital, known as the Ruchill Hospital, which was

opened by Her Royal Highness Princess Christian, on June 13, 1900. The entire cost of the Ruchill Hospital was about $1,250,000, and it will accommodate about 440 patients, allowing upwards of 2,000 cubic feet to each bed.

It is therefore evident that Glasgow is more liberally supplied with hospital accommodations for infectious diseases than any city in this country; or, to state it in a different way, there are beds for patients ill with infectious diseases for 9.79 out of every 10,000 of the population. This is a magnificent work in sanitary science, and has been a very important factor in lowering the death rate of Glasgow to an astonishing degree. It is well to remember that the population of Glasgow in 1900 was 755,730, only about 200,000 more than that of Boston.

In London the first fever hospital, or hospital for infectious diseases, under the charge of the Asylums Board, was opened the last of September, 1871, but patients ill with diphtheria were not admitted until October 23, 1888. Since the opening of the first hospital, and the others that have been opened from time to time, there have been treated to January 1, 1901, 244,206 patients, 161,646 of whom were ill with scarlet fever; 48,529 had diphtheria. Typhus fever, which is always present to a greater or less extent in England, was represented by 2,351 patients. Typhoid fever, or enteric fever as it is termed in England, caused the admission of 15,632; and there were admitted patients ill with other diseases, 16,048. It is interesting to note the diminution in the death rate of diphtheria. In 1888 the death rate from this disease was 59.30 per cent. In 1889 it was 40.74, but there was no marked diminution in the percentage until 1894, when the death rate was 22.85, coincident with the use of antitoxin. In 1896, when antitoxin was more generally used, the rate was 17.69 per cent. In 1900 the percentage was 12.27. Nine of these fever hospitals in London and one large convalescent home are under the charge of the Asylums Board. They are situated in different sections of the city, many of them in the outlying portions. All of them are in the centres of large tracts of land, so they have an abundant supply of fresh air. The names are as follows: The Eastern

Fever Hospital, the North Eastern, the North Western, the South Western, the Fountain, the Grove, South Eastern, Park and Brook Fever Hospitals. What immediately attracts a hospital man from this side of the water is the bountiful supply of air space; 2,000 cubic feet to each patient and fifteen feet of wall space. A second thing that also attracts his attention is the number of vacant wards, purposely kept vacant until an emergency arises for their use, or until the time has come to empty a ward for disinfection and renovation, a condition of things that has not been reached in this country. In London, nine individuals out of every 10,000 of the population can be provided with good hospital accommodations, if ill with an infectious disease.

Previous to 1888, there was no special provision in Boston for the care of patients ill with diphtheria and scarlet fever, but, as physicians viewed with dismay the constantly increasing prevalence of these diseases, it was decided by the trustees of the Boston City Hospital, in 1887, to erect two pavilions for this special purpose.

On April 1, 1886, the following communication was sent by the Board of Trustees of the Boston City Hospital to the City Council. On motion of Mr. Lee, this communication was referred to the Committee on Appropriations.

To the Honorable the City Council of the City of Boston:

About a year ago, $40,000 was voted by the City Council for contagious cases on the grounds of the City Hospital. This appropriation was made necessary on account of the great danger to patients who were obliged to remain in wards with contagious cases, and also on account of the exposure of visitors who called at these wards to see relatives and friends. When the trustees asked for $40,000, they took for a basis what it cost the city some years before to erect two hospital buildings of about the same dimensions of corrugated iron, and it was intended to construct the two contagious wards of the same material. Since that time, that is, the voting of the $40,000, the building laws have been changed, and it is necessary that the building should be of brick, and the walls of greater thickness than was intended. This necessitates a greater outlay of money. Last week, sealed proposals were invited in the usual way for the erection and finishing of the two buildings. The bids were opened to-day, examined carefully, the lowest bids for the different kinds of work added together, and amounted to fifty thousand three hundred and twenty-six (50,326) dollars. It is estimated that $3,000 additional will be needed to furnish the buildings with

steam heat, and $2,000 extras. It is the opinion of the board that the sum of $55,000 is needed to erect and finish the contagious wards, that is to say, $15,000 in addition to the sum already appropriated.

For the Trustees,

T. J. DACEY,
President.

On July 12, 1886, the following order was introduced in the City Council:

July 12, 1886.

Ordered, That the city architect be authorized to prepare plans and proceed with the construction of two wards for contagious cases on the grounds of the City Hospital, the expense attending the same to be charged to the special appropriation for said building.

In September, 1886, the subjoined order was introduced:

September 9, 1886.

Order for city architect to prepare plans and proceed with the construction of two wards for contagious cases on City Hospital grounds. Passed in concurrence under a suspension of the rule, moved by Mr. Duggan. A reconsideration was refused.

In February, 1888, Ward A was opened for the treatment of scarlet fever, and in March of the same year Ward E was opened for the treatment of diphtheria. At first, although the number of cases of these two diseases in Boston was very great, there were comparatively few applications for admissions, but as time went on the public generally began to realize the advantage of sending patients to these wards. After a time these wards became crowded, particularly the scarlet fever ward, so that many applicants were refused admission. So crowded did the scarlet fever wards become in the latter part of 1893 that an application, which was granted, was made to the Board of Health by the trustees of the Boston City Hospital for the temporary transfer of the Epidemic Hospital on Swett street, now Southampton street, for the accommodation of scarlet fever patients. This hospital was a temporary wooden structure, built in 1892 during the cholera excitement, for use if there should be any cases of cholera in Boston. The building had never been occupied and would accommodate from 40 to 50 patients comfortably and 60 or 70 when crowded.

As the Board of Trustees have always taken the initiative in hospital accommodations for infectious diseases in Boston, and finding that suitable accommodations could not be provided for scarlet fever and diphtheria in the buildings used for that purpose at that time, they sent the following communication to His Honor the Mayor, which was transmitted by him to the City Council:

OFFICE OF THE MAYOR,
CITY HALL, April 4, 1892.

To the Honorable the City Council:

GENTLEMEN, — I transmit herewith a communication from the Board of Trustees of the City Hospital, requesting an appropriation of $150,000 to carry out the plans of the new hospital for contagious diseases.

Respectfully submitted,
N. MATTHEWS, JR.,
Mayor.

BOSTON CITY HOSPITAL,
BOSTON, April 2, 1892.

HON. NATHAN MATTHEWS, JR., *Mayor of Boston:*

SIR, — The trustees of the City Hospital desire to call your especial attention to the difficulties and dangers in caring for patients with contagious diseases under the present conditions at the City Hospital, and the great necessity for changing the present methods of caring for contagious diseases, which are dangerous not only to the public at large, but also to the doctors, nurses and others engaged in the ordinary avocations of the Hospital.

Previous to February, 1888, the Hospital was called upon from time to time to treat in considerable numbers patients suffering with diphtheria, scarlet fever and other contagious diseases, placing them in wards devoted to general medical and surgical cases. This practice was bad, and was a great wrong, not only to the patients treated for those diseases, but exposed other patients, as well as nurses and attendants. Notwithstanding repeated recommendations and petitions for isolated wards, it was only after exhibiting the long list of persons who were infected through this bad practice, including quite a number of deaths, that the City Government was awakened to the existing dangers. It was at that time recommended that the wards for contagious diseases be isolated, instead of attached to the present hospital buildings. Economy and expediency seemed to demand that, for the time being at least, two wards should be constructed among the present group of hospital buildings for the treatment of these diseases. Admirable buildings were designed and constructed, and in February, 1888, were occupied — one ward for diphtheria, and one ward for scarlet fever.

This was a great advance over the previous existing conditions, and was a great relief. New regulations were adopted, and by every possible

means it was attempted to prevent the contagion or infection of persons other than those employed in these wards. In spite of the best efforts, however, cases have frequently occurred among the doctors, nurses and other employees, some of whom were employed in the wards and others who were not. Within a year after the buildings were occupied it was evident that the practice of associating contagious diseases so closely with other wards continued to be pernicious and dangerous. So clearly was this evident that in the annual report for that year the management of the Hospital placed itself on record as believing that the arrangement was a bad one. In the annual report for that year the superintendent said: "The policy of placing wards for coutagious diseases in somewhat close proximity to other wards of a general hospital is unquestionably a bad one. The practice of receiving such cases has existed here for many years, and has gradually been forced upon the Hospital, a result not infrequent in a municipal hospital of constantly increasing proportions. I would urge upon your consideration the necessity of asking the City Council to abolish this practice, by establishing a special hospital for the care and treatment of such diseases as scarlet fever, diphtheria and measles."

In the following year, 1889, the trustees call attention to the difficulties of the management of contagious diseases in connection with other general cases. Attention was called in the last annual report to the great difficulties of managing such wards in connection with others containing ordinary medical and surgical cases. New regulations and modified methods have been adopted looking to an improved management. The fact remains, however, that wards used for the treatment of contagious diseases, such as diphtheria and scarlet fever, cannot be carried on in connection with a general hospital without great risk to other classes of patients and to the household at large. Whatever arrangement is made, while the wards occupy their present location, it must at best be considered a compromise. Improvement may be effected by a rearrangement of the surgical and medical service, both of the visiting and house staff; but the trustees will not be free from anxiety until wards more isolated are afforded for these diseases.

It would be a great improvement, after the Hospital has acquired all the land between the present grounds and East Chester Park, to build a group of isolated wards upon the most remote portion of the acquired tract, and maintain them as a distinct and separate establishment, and allow no communication with the Hospital as now existing. Such special hospital should contain also wards for measles, for which there are now no proper accommodations. There should also be special rooms, or isolated groups of rooms, where cases suspected to be smallpox or typhus fever, or other contagious disease, could be placed for observation.

It has recently more than once occurred in this city that strangers have been taken ill with what seemed to experts to be smallpox. They could not be taken to the smallpox hospital while in a doubtful condition, lest such removal would surely expose them to that disease. They should not be received here, for, if having smallpox, they would expose a household of six hundred and fifty persons. No hotel or

family would receive them, and no proper accommodations are anywhere provided in the city.

The trustees are constantly under apprehension in realizing the responsibility of the situation. They think it proper to call your attention to the existence of such facts and conditions which give frequent rise to complicating and vexing questions and criticisms.

The Superintendent in his report for the same year, after calling attention to more stringent regulations and changes in the service intended to reduce contact, again says: "Whatever changes may be made, the fact still remains that these wards are too intimately connected with the Hospital as a whole. The city will not do its whole duty until it shall provide a hospital for the treatment of these diseases, apart from the rest of the Hospital, and strictly isolated. The death rate from these diseases will remain inexcusably high in comparison with other large communities, especially abroad, until our community shall better appreciate what is done elsewhere — better comprehend the dangers of contact — and until the city is able and willing to pay for the best means and methods.

In the report for 1890 the trustees again call attention to their experience on this subject, and emphasize the attention of the Mayor and City Council to the conditions still existing. The report of the Superintendent gives facts of interest in connection with the contagious service during the past year. The trustees desire to express *once again* their conviction that it is extremely undesirable that wards for contagious diseases should be maintained in direct communication with others in which general medical and surgical cases are treated. The facts gathered from the work of the past year fortify them in this opinion. Fortunately, no epidemic has come upon the Hospital, but, nevertheless, this direct connection has been a cause of anxiety, and has compelled the enforcement of restrictions not altogether agreeable or desirable under other circumstances.

The trustees have endeavored to provide every safeguard possible under the existing condition in order to prevent the transmission of contagion. The system of separation of services has been in operation for six months, and beyond doubt has improved the character of the contagious service, and greatly diminished the chances of communicating disease to other parts of the Hospital. The trustees, nevertheless, fully believe that the wards for contagious diseases should be removed to a location more remotely connected with the present group of Hospital buildings.

The Superintendent has been constantly urging upon the Board the necessity for the discontinuance of the present method of treating contagious diseases, and in the report for the same year, 1890, he again formally calls attention to this fact: "The Superintendent desires to again place himself on record as strongly believing that the continuance of wards for contagious diseases, in connection with the general wards and services of the Hospital, is difficult of proper management, unsafe to the Hospital force not connected directly with the work, prejudicial to public health, and also improper and illogical from a hygienic standpoint. Such wards should be removed to an isolated location, and the move cannot be made too soon."

By the foregoing statement it will be seen that the trustees have been keenly alive to the gravity of the situation. The subject is one that almost monthly, in one form or another, comes before them for discussion, brought up by some vexing question of management or the report that some nurse, patient or employee has been infected and is ill.

By the opening of the two wards before referred to, from February, 1888, to 1891, the trustees were able to receive all cases of contagious diseases which had a claim upon the city, and of a class proper for admission. During the year 1891 the demand for room constantly increased. Originally there were seventy-six beds in the contagious wards. Of this number twenty-four were in the isolated chambers in the second story of the building containing the contagious wards. On account of the necessity of isolating the physicians and nurses, and the demand for room for other employees, the four sets of chambers originally intended for the expansion of the contagious service have been given up to other purposes, thereby diminishing the original capacity of these wards from seventy-six beds to fifty-two beds. For the last six months the demands for admission for cases of scarlet fever have constantly been more than we could meet. Not only this, but the wards have been unduly crowded. While the normal capacity of the ward is twenty-six beds, for many weeks the number of patients have been thirty-five and thirty-six.

Not only are the wards not large enough to receive the cases demanding admission, but their close proximity to other parts of the Hospital, in spite of the best arrangements that ingenuity can suggest, has caused the diseases to spread to other parts of the house. Isolated cases of both diphtheria and scarlet fever crop out in other wards, and nurses who are in no way connected with the contagious wards contract one or the other of these diseases. Nearly every month the Superintendent has reported to the trustees that one or more nurses or house doctors are ill with a contagious disease.

On March 3, 1892, the medical and surgical staff of the Hospital addressed a formal communication to the trustees, calling their attention to the difficulty of managing contagious diseases, and especially to the fact of the large amount of sickness among the house doctors and nurses. In their communication they recommend that the wards for contagious diseases be separated from the Hospital as soon as such separation is practicable.

During the past eight months two house officers have contracted diphtheria, and one case was nearly fatal. Among the nurses four have had scarlet fever and four diphtheria, of whom two barely escaped a fatal termination, and one died.

In view of the foregoing facts, it must seem evident to your Honor that the condition of things existing here at the present time is a serious one — the accommodations are not sufficient to meet the demands for admission; the close proximity of the contagious wards to other parts of the house endangers not only other patients, but the house staff and nursing force. The contagion always present in our midst jeopardizes the health and lives of other patients, and it holds the possibility of involving the city in liabilities.

The trustees last year requested a special appropriation of $130,000

for the purpose of building isolated wards on the newly acquired land between East Chester Park and East Springfield street, now under our jurisdiction. For financial reasons which then seemed unavoidable to the City Council, this item was deferred. The trustees, therefore, at this time deem it their duty to again invite your Honor's attention to all these facts. They will use their best endeavors to meet the demands for admission, so far as the present limitations will allow; they will carefully regulate the management of these wards as well as it is possible under such great and dangerous disadvantages, but they should not be held responsible for complaints or forced rejections of patients because the wards are already crowded, or for the communicating of disease to nurses or patients when the infection comes from causes beyond their control.

The management of these wards, under the present conditions, is the cause of more anxiety to the trustees than all the other parts of the Hospital. In view of all these facts, the trustees shrink from the possibility of what may happen without calling renewed attention to the existing dangers and responsibilities in the case.

For the purposes of constructing wards and suitable buildings necessary for the carrying out of the plans of a new hospital for contagious diseases, the trustees estimate that the sum of $150,000 will be required, and they recommend that an appropriation of that amount be made for that purpose.

Respectfully submitted,

For the Trustees,

A. SHUMAN, *President pro tem.*

It is an interesting fact that the Board of Trustees of the Boston City Hospital established the first separate hospital for the treatment of infectious diseases in this country. This is known as the South Department of the Boston City Hospital, and was opened for the admission of patients August 31, 1895. A full description of the buildings will be found in a different part of this history. A brief allusion to them may not be inappropriate at the present time.

Owing to the fact that the site proposed for the erection of the new buildings was somewhat limited, it became necessary to so arrange these buildings that there should be as little communication between them as possible. There are seven buildings in this department: the Administration Building, the Gate Lodge, Domestic Building, Laundry Building, and the Home for Nurses, divided into two wings so that there can be no communication between nurses in charge of diphtheria patients and those having the charge of scarlet fever patients. The buildings for the patients are

two two-story buildings each 160 feet long and divided by open air transverse corridors, so that each floor can be separated into four completely isolated wards. In addition to this, each section is divided into small rooms capable of accommodating from four to seven patients, with the exception of the semi-octagonal wards at the southern end of each pavilion, which accommodate, each, fifteen convalescent patients. There are also eight isolation wards, the floors of which are of terazzo pavement and the walls of glazed brick, so that these rooms can be thoroughly and effectively disinfected after the removal of patients. These wards are exposed to the open air on all four sides, therefore there can be no danger of the transmission of diseases from them. There is also a steam sterilizer on the premises for the disinfection of mattresses and all other articles that cannot be disinfected by boiling. All the garbage and refuse from the wards is burned in a crematory, so that there may be no danger to the public from these substances. The staff and all the employees reside on the premises in order that the chance of the Hospital becoming a focus of disease may be reduced to a minimum. The capacity of the Hospital is 250 beds. The buildings are so arranged that one does not obstruct the sunlight from another. An abundance of sunlight plays such an important rôle in hospital construction that no hospital building should be considered worthy of the name that does not have plenty of sunlight. It has been said that hospitals for infectious diseases situated in a crowded locality become foci for the spread of disease, and while this may be true, if proper attention is not paid to disinfection and if the employees are permitted to reside outside the hospital, yet the history of the South Department for one year proves conclusively that a hospital for infectious diseases can be so conducted as not to be of the slightest danger to the community. It is a well recognized fact that the germs of infectious diseases are not carried any very great distance through the open air. It is a fact accepted by all medical men that diphtheria is not transmitted through the air, and that it requires close contact with the patient suffering from this disease to contract it. From September 1, 1895, to September 1, 1896, there were

reported to the Board of Health of Boston 3,989 cases of diphtheria. Of this number, within an eighth of a mile radius from the Hospital eleven cases occurred. Of these eleven cases six occurred in one house and could be directly traced to infection from one member of the family to the others. Although the source of infection in the five other cases could not be traced, yet from their situation it was evident that the disease could not have been contracted from the Hospital. In the radius of a quarter of a mile 82 cases were reported, in a half mile radius 238, in the three-quarters of a mile radius 292, and in the mile radius 423, making a total of 1,046; the remaining 2,943 existing in other portions of the city, two, three, and in some instances five miles from the Hospital. It might be said that naturally as the territory is increased the number of reported cases would also be increased, but the ratio of increase of the reported cases bears no relation to the increase of territory. The eleven cases occurring within an eighth of a mile from the Hospital could not be traced to infection from the Hospital with any more reason than those occurring at greater distances. In short, nearly three times as many cases were reported more than a mile from the Hospital as were reported within a mile.

It is generally conceded that the area of infection of scarlet fever is much greater than that of diphtheria. Investigations, therefore, of special hospitals as a source of disease are more satisfactory conducted with scarlet fever as a basis. For the year ending September 1, 1896, 1,043 cases of scarlet fever were reported to the Board of Health. No case occurred within an eighth of a mile of the Hospital; 68 cases within a quarter of a mile, and of these 68, 60 occurred in an eleemosynary institution in no way connected with the Hospital; within half a mile from the Hospital, 71 cases; 75 cases within three-quarters of a mile; and 72 cases within a mile; making a total of 286 cases within a mile of the Hospital. The whole number reported to the Board of Health was 1,043, and therefore 757 cases occurred more than one mile from the Hospital. It would seem as if these statistics would convince any unbiased observer of the truth of the statement that hospitals for infectious diseases, when

properly conducted, are not sources of danger to the residents in the immediate vicinity. It is very important, however, that all employees should reside in the Hospital, and that they should wear clothing of washable materials. It is also requisite that all garbage and refuse from the wards should be burned on the premises.

Since the Hospital has been in operation, ten years and four months, during which time nearly 25,000 patients ill with infectious diseases have been treated, there has been no instance where disease has been transmitted from the Hospital, notwithstanding the fact the buildings are situated in a somewhat thickly settled district.

In the Twenty-fifth Annual Report for 1893 of the State Board of Health of Massachusetts, an article was published detailing the advantages of isolation hospitals, together with some of the measures which have been taken in other countries for their establishment and maintenance. When the report was written the provision for the separate treatment of infectious diseases in this State was very limited. The continued prevalence of this class of diseases, together with the rapid increase of population and of the consequent density in the cities and large towns, brought the importance of the subject more and more forcibly to the local sanitary authorities. In 1894 an Act was passed by the Legislature bearing on this point. The text of the Act is as follows:

Acts of 1894, Chapter 511.

Section 1. In any city in which no suitable hospital accommodations have been provided for the care and treatment of persons suffering from contagious diseases dangerous to the public health, the board of health of such city may address a communication to the mayor thereof, stating that in the opinion of said board the safety of the inhabitants of the city demands that suitable accommodations should be provided for the reception and treatment of persons suffering from such diseases, other than smallpox and those of a venereal nature. The mayor shall forthwith transmit such communication to the city council, and the city council shall forthwith order such hospital accommodations to be provided, and shall make the necessary appropriations therefor.

Sect. 2. Every city in which hospital accommodations have been provided in accordance with the provisions of this act shall make an annual appropriation for the maintenance of such hospital accommodations, and said appropriation shall be expended under the direction of the board of health, unless otherwise ordered by the city government.

As a result of an investigation of the State Board of Health of Massachusetts in 1899 regarding the existence of hospitals for infectious diseases in Massachusetts, it appears that in ten cities of Massachusetts and in the town of Brookline there is at present provision for the reception of persons ill with infectious diseases, except smallpox. Nine of these hospitals are in cities having a population of over 30,000 each. Four of these are supported by public funds, four by private funds, and three by both. In only three or four of the cities, and the town of Brookline, are the hospitals under the management of the local boards of health. In the other cities the hospitals are managed by independent boards of trustees.

In Boston the ratio of hospital accommodations for patients ill with infectious diseases at the present time is 3.85 per 10,000 of the population, as compared with that of Glasgow of 9.79 or with that of London of 9.

It is interesting to note as a matter of history that Dr. F. H. Williams of the Contagious Service of the Boston City Hospital instituted the cultural diagnosis of diphtheria in 1892. It is also worthy of note that antitoxin was first given in 1894.

During the ten years and four months that the South Department has been in operation there have been 24,932 patients admitted. The deaths during this time have been 2,953, giving a ratio of mortality of 11.84 per cent.

The following table gives the number of admissions and the deaths during this time:

Date.	Admissions.	Deaths.
August 31, 1895, to December 31, 1895	902	100
January 1, 1896, to December 31, 1896	2,736	415
January 1, 1897, to December 31, 1897	2,770	363
January 1, 1898, to December 31, 1898	1,554	141
January 1, 1899, to December 31, 1899	2,677	290
January 1, 1900, to December 31, 1900	3,781	505
January 1, 1901, to December 31, 1901	2,681	381
January 1, 1902, to December 31, 1902	1,875	215
January 1, 1903, to December 31, 1903	2,166	210
January 1, 1904, to December 31, 1904	2,133	191
January 1, 1905, to December 31, 1905	1,657	142
Total	24,932	2,953

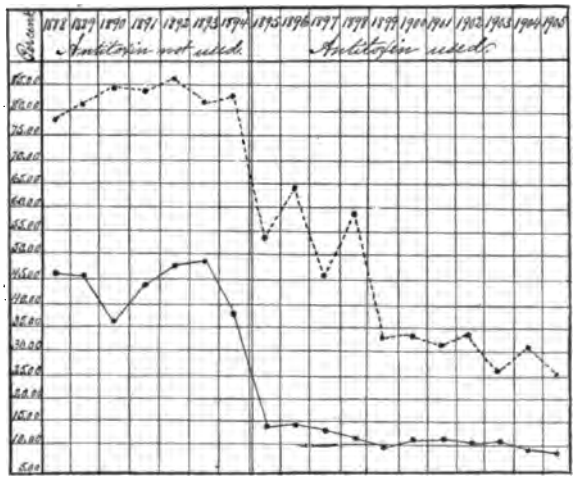
The effect of antitoxin on the treatment of diphtheria is shown in Chart A, which gives the percentage of mortality, as shown by the full black line, of all cases treated at the Boston City Hospital from 1888 to 1905. From 1888 to August 31, 1895, the patients were treated at the Boston City Hospital proper. Since that time they have been treated

(A)

PER CENT. OF MORTALITY OF DIPHTHERIA AT THE BOSTON CITY HOSPITAL PROPER, AND AT THE SOUTH DEPARTMENT, FROM 1888 TO 1905, INCLUSIVE. PER CENT. OF MORTALITY OF INTUBATIONS FOR THE SAME TIME:

From 1888 to 1894, Antitoxin not used.
From 1895 to 1905, Antitoxin used.

DIPHTHERIA = ——— INTUBATION = ...

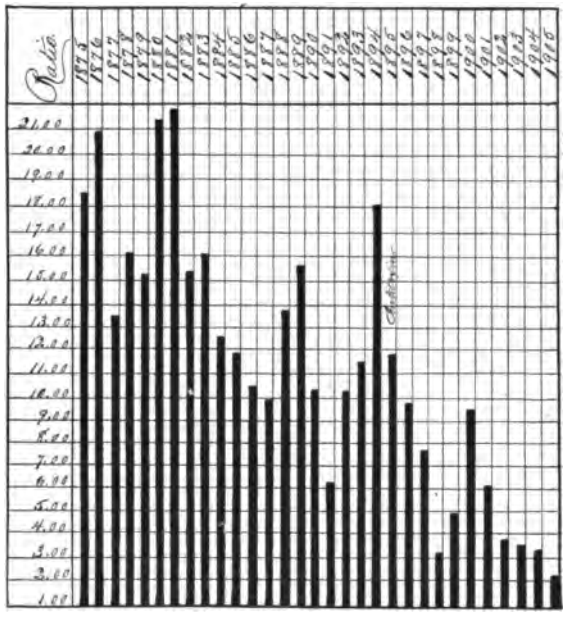


at the South Department. The broken line represents the mortality per cent. of intubation cases for the same time. It must be borne in mind that antitoxin was used only to a very limited extent in 1894. Since 1895 it has been used in every case, and it has been given in very large doses to patients very seriously ill and to many apparently moribund with gratifying results. It would seem as if the curve of the full

black line from 1888 to 1905 should convince any one of the beneficial effects of antitoxin treatment. The death rate of diphtheria during 1905 was 9.39 per cent. If the deaths from this disease occurring within twenty-four hours of admission are eliminated the actual mortality of diphtheria amenable to treatment for the year 1905 is found to be 7.15 per cent.

(B)

RATIO OF MORTALITY OF DIPHTHERIA PER 10,000 OF THE POPULATION, IN BOSTON, FROM 1875 TO 1905, INCLUSIVE.



Average Ratio of Mortality from 1875 to 1894, 14.61.
Average Ratio of Mortality from 1895 to 1905, 6.

The diminution in the death rate of intubation cases as shown by the broken line shows conclusively the effect of antitoxin in this type of the disease. The ratio of mortality in laryngeal diphtheria requiring operative interference from 1888 to 1894, in pre-antitoxin days, based on 634 intubations, is 82.49 per cent., as compared with 39.24 per cent. from

1895 to 1905, inclusive, based on 1,766 operations where antitoxin was used. The percentage of mortality of intubation cases for 1905 is 25.92.

The effect of antitoxin and hospital treatment on the death rate of Boston is shown on Chart B, which indicates the ratio of mortality of diphtheria per 10,000 of the population for thirty-one years, from 1875 to 1905, inclusive. It will be seen that for the twenty years from 1875 to 1894, before antitoxin was used, the ratio of mortality ranged from 21.78 to 6.23, with an average for this time of 14.61 per 10,000 of the population. If a comparison is made for these twenty years with the ten years commencing with 1896 and ending with 1905, it will be seen that in only one year of the twenty was the death rate as low as it has been from 1896 to 1905, inclusive. The year 1895 is purposely omitted, because the South Department was not in operation until the first of September of that year. Since 1896, when the ratio of mortality was 9.80 per 10,000 of the population, it has gradually fallen, with the exception of one year, when it was 9.57, an epidemic year, to 2.18 per 10,000 of the population, the rate for 1905. For the twenty years from 1875 to 1894 the average ratio of mortality per 10,000 of the population in Boston was 14.61, while that from 1895 to 1905, inclusive, was 6, a diminution of more than one-half.

It is a very significant fact that the ratio of mortality for 1905, when a greater proportion of patients ill with diphtheria were sent to the Hospital and received antitoxin treatment, is lower than any year since diphtheria was recognized as a disease in the mortuary statistics of Boston.

As intubation is a comparatively modern operation, and as it was performed at the Boston City Hospital soon after O'Dwyer published his monograph on this subject, it may be interesting to compare the statistics of this operation since the advent of antitoxin with those of tracheotomy before antitoxin was used, and with those of intubation previous to antitoxin.

Jacobi, previous to 1895, says that out of 1,024 operations of tracheotomy performed in various parts of the world, but principally in Europe, the percentage of mortality was 78.52.

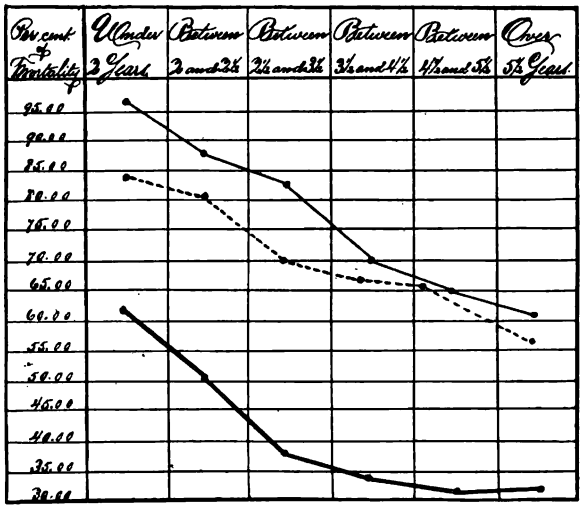
In 327 tracheotomy cases at the Boston City Hospital from 1864 to 1887, the death rate was 70.95 per cent., as given by Drs. Lovett and Munro.

Dr. Max J. Stern of Philadelphia, in collating Bourdillat's statistics, gives the percentage of mortality of tracheotomy as 73.60.

(C)

PERCENTAGE OF MORTALITY OF TRACHEOTOMY CASES AND OF INTUBATION CASES WITHOUT ANTITOXIN, AND OF INTUBATION CASES WITH ANTITOXIN.

Bourdillat's Tracheotomy Cases = ———
Waxham's Intubation Cases = · ·····
South Department Intubation Cases = ═══



The percentages of Bourdillat's tracheotomy statistics are estimated on 1,024 operations.

The percentages of Waxham's intubation cases are estimated on 1,072 operations.

The percentages of the South Department intubation cases are estimated on 1,671 operations.

Waxham collected 1,072 cases of intubation performed in various parts of the United States, and he gives the mortality per cent. as 73.23.

At the South Department, from September, 1895, to December 31, 1905, the death rate of the 1,671 intubation cases was 43.44 per cent., as compared with 73.60 per cent.

in Bourdillat's tracheotomy statistics, or with 73.23 per cent. in Waxham's intubation statistics.

Chart C gives the percentages of mortality by ages, of tracheotomy cases and of intubation cases without antitoxin, and of intubation cases with antitoxin.

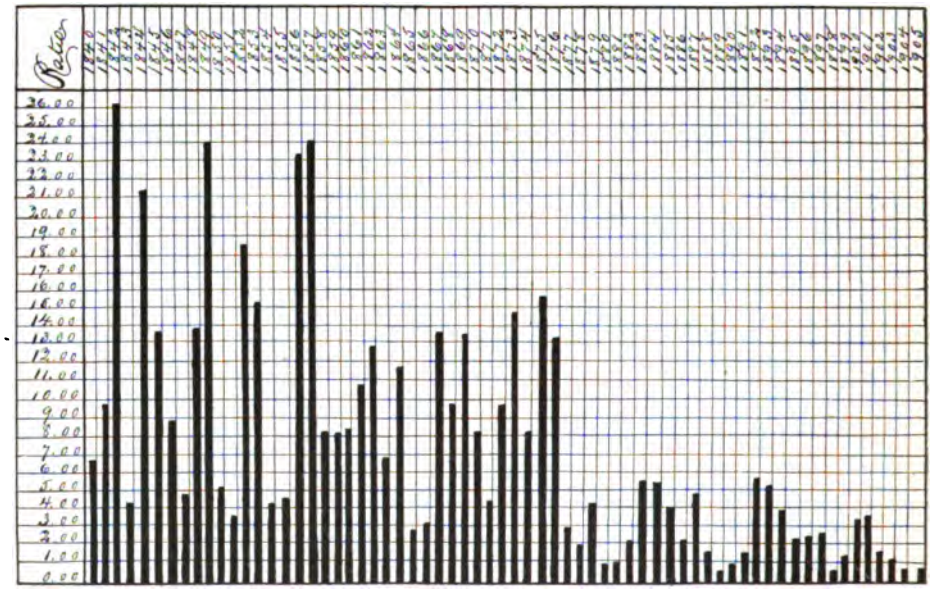
By following the full black line, which represents the tracheotomy mortality rate, and the broken line, which represents Waxham's intubations, and the parallel lines, which represent the South Department intubations, it will be seen that the mortality rate of tracheotomy under two years of age was 97 per cent.; that Waxham's mortality rate of intubation previous to antitoxin was 84.38 per cent., while that of the South Department was 61.95. Between the ages of two and two and one-half years the percentages were 88 for Bourdillat, 80.54 for Waxham, and 50.73 at the South Department. From two and one-half to three and one-half the rates in the same order are 83 per cent., 70 per cent., and 38.32. Between three and one-half and four and one-half years of age Bourdillat's per cent. is 70, Waxham's 67.35, and the South Department 34.14. From four and one-half to five and one-half years, Bourdillat's per cent. is 65, Waxham's 66.08, and the South Department 31.82. Over five and one-half years, 61 per cent. in Bourdillat's statistics, 56.67 in Waxham's, and 32.5 at the South Department.

Scarlet fever always prevails to a greater or less extent in Boston, and, therefore, the importance of hospital accommodations for this disease is self-evident. The type varies very considerably in different years. Chart D gives the ratio of mortality of scarlet fever per 10,000 of the population for sixty-six years, from 1840 to 1905, inclusive. It will be seen from this chart that previous to 1876 the average ratio of mortality per 10,000 of the population was 11.22, while that from 1877 to 1905 was 2.54. It will also be seen that previous to 1877 there was a marked increment in the ratio about every five years, particularly noticeable from 1841 to 1857. From 1857 to 1876, although the average ratio is not so high, yet every two or three years there is a marked increase. From 1877 to 1895 the ratios are not particularly high, but the variation from a low rate to that of a compara-

tively high one is noticeable. Since 1895 the ratios are lower than in previous years, but there is still a certain amount of variation. From 1902 to 1905, inclusive, there has been a diminution each year in the rate. It is a significant fact that since 1895 there has been no general epidemic of the disease as compared with previous years. For instance, in 1892 there

(D)

RATIO OF MORTALITY OF SCARLATINA PER 10,000 OF THE POPULATION, IN BOSTON, FOR SIXTY-SIX YEARS, 1840 TO 1905, INCLUSIVE.



Since 1895, when the Hospital was opened, there has been no general epidemic of scarlatina, in Boston, as compared with previous years.

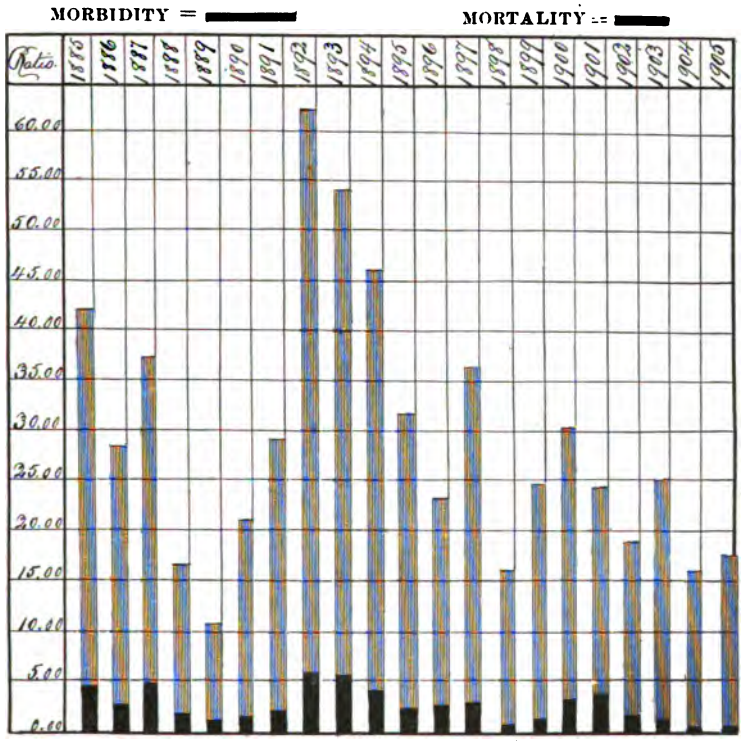
was a slight epidemic of the disease, the ratio of mortality per 10,000 being five and a fraction. If we go back to 1876 we find that the ratio was thirteen per 10,000, and on going back to 1857 the ratio was twenty-four; in 1849 it was twenty-four; and in 1842 it was twenty-six per 10,000. While there has been no discovery regarding the treatment of scarlet fever, such as the antitoxin of diphtheria, yet the diminution in the mortality can be explained by the dimin-

ished frequency of the disease due to isolation in the hospital.

Chart E shows the ratio of morbidity and the ratio of mortality in Boston per 10,000 of the population from 1885

(E)

RATIO OF MORBIDITY AND RATIO OF MORTALITY OF SCARLATINA, IN BOSTON, PER 10,000 OF THE POPULATION, FROM 1885 TO 1905, INCLUSIVE.



Average Ratio of Morbidity from 1885 to 1894, inclusive, 34.84.
Average Ratio of Morbidity from 1895 to 1905, inclusive, 24.25.
Average Ratio of Mortality from 1885 to 1894, inclusive, 2.99.
Average Ratio of Mortality from 1895 to 1905, inclusive, 1.53.

to 1905, inclusive. The light lines indicate the morbidity and the heavy black lines the mortality. It will be seen from this chart that at no time since 1895 has there been such a general epidemic of scarlet fever in Boston as occurred in 1892, 1893 and 1894. There has also been a corresponding diminu-

tion in the mortality rate of the eleven years from 1895 to 1905, inclusive, as compared with 1892, 1893 and 1894. The average ratio of morbidity from 1885 to 1894, inclusive, is 34.84; the average ratio of mortality for the same time is 2.99. The average ratio of morbidity from 1895 to 1905, inclusive, is 24.25; the average ratio of mortality for the same time is 1.53.

It is not to be expected that scarlet fever can be eradicated, because there are always in the community a great number of mild and unrecognized attacks of the disease, which serve as foci for its spread. It must be evident, however, from a study of the foregoing statistics, that the prevalence of scarlet fever has very much diminished since the opening of the South Department, as there has been no general and widespread epidemic of the disease since 1895.

It is not to be expected that special wards can prevent outbreaks of measles, for such is the intensely infectious nature of the disease that it spreads very rapidly before a diagnosis can be made; but much suffering may be prevented and many lives can be saved by the treatment of patients in hospital, seriously ill with measles. Although the accommodations at the South Department for this disease are very limited, yet an attempt has been made to provide, even at the risk of overcrowding, for those persons seriously ill with measles.

Since 1897, 888 patients seriously ill with measles have been refused admission for lack of room. The summary of rejections for the different years is as follows: For the financial year ending January 31, 1897, 1; for the year ending January 31, 1898, 86; for the year ending January 31, 1899, 26; for the year ending January 31, 1900, 266; January 31, 1901, 155; January 31, 1902, 209; January 31, 1903, 31; January 31, 1904, 59; for the year ending January 31, 1905, 36, and for the year ending January 31, 1906, 19, making a total of 888. It is noticeable that the number of rejections varies greatly, depending upon the type of the disease and its prevalence; for instance, in one year there were no accommodations for 266 patients; in a second year 209 patients were refused admission for want of room, while in

a third year there was no provision for 155 applicants. Although the number of rejections in the other years is not so large, yet the fact remains that there were no accommodations in Boston for quite a number of persons seriously ill with measles who required hospital treatment.

Considering the fact that 1,984 cases of measles were reported to the Board of Health of Boston during 1905, it is not to be supposed that the city can provide wards for the treatment of all of these persons, but there are seven classes of patients ill with measles who absolutely require hospital treatment.

First, clerks living in lodging houses.

Second, domestics in families or hotels.

Third, children whose mothers support the families by charing, and who can send their children to day nurseries as long as the children are well.

Fourth, patients ill with laryngeal diphtheria and measles.

Fifth, patients who have mastoid inflammations during an attack of measles.

Sixth, patients with severe attacks of broncho-pneumonia.

Seventh, patients who are admitted to the Boston City Hospital proper, ill with a non-infectious disease or injuries, who, while at the Hospital, develop measles, and also similar patients in any of the large hospitals, not to say anything of the various institutions in Boston, in which every year, in some of them, there is an outbreak of measles. These patients cannot be admitted to any hospital except the South Department. There is a reasonable prospect that before long a separate pavilion will be erected for the treatment of measles, as has been earnestly advocated each year for the past ten years in the annual reports of the Board of Trustees.

The chief duty of a hospital is the care of the sick, but a hospital has a second important duty to perform, that of education. In no way can a medical student become a safe practitioner than by the study of disease at the bedside.

During eight months of the year there have been from three to five clinics each week at the South Department. At

these clinics the importance of an early diagnosis in infectious diseases has been strongly emphasized. Great stress has been laid upon the importance of bacteriological examinations in cases of suspected sore throat; the necessity of cultures where there is a persistent nasal discharge and the importance of cultures after apparent recovery from diphtheria have been inculcated.

The probability of heart complications in diphtheria and the possibility of their occurrence in scarlet fever have been

FIG. 1.

carefully explained to the students and illustrated by patients in the wards.

The duty of a physician having care of a patient ill with an infectious disease, the public health laws and the duties and responsibilities of health officers have been emphasized.

It must be borne in mind that the Boston City Hospital in 1888 offered the first opportunity in this country for the systematic clinical study of infectious diseases. Since the

opening of the South Department the teaching in infectious diseases has been greatly extended owing to the increase in the amount of clinical material.

As the average age of patients at the South Department is nine years, the clinical instruction is a part of the course in Pediatrics at the Harvard Medical School.

During the past ten years health officers, city officials and members of the faculties of medical colleges in this country

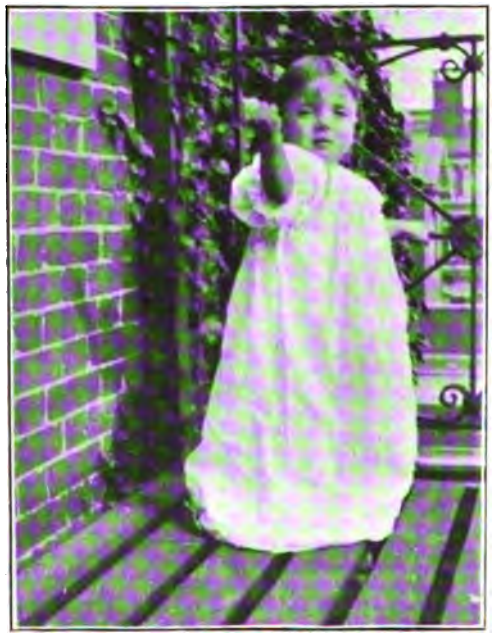


FIG. 2.

have visited the South Department in order to become familiar with the construction of the buildings, the treatment of the patients and the methods of instruction adopted.

In accordance with a wise regulation of the trustees no visiting is permitted except to patients dangerously ill, in which case the friends of the patients are allowed to see them for a greater or less length of time, depending on the individual conditions. In this respect private patients have no greater privileges than ward patients. It is certainly a

matter for congratulation, and redounds to the credit of the house staff of the South Department, that during the ten years and four months that the hospital has been in operation no patient has died without notification of his dangerous condition being sent to the friends, except in instances where patients died within one hour or two after admission. If the treacherous nature of diphtheria is taken into account, and the possibility of sudden renal complications in scarlet fever

FIG. 3.

is considered, it is evident that the house staff cannot have been negligent in the observation of the patients under their charge.

The condition of patients is always given in answer to telephone messages, to a certain extent, but it is impossible on the telephone to give a satisfactory account of each individual case.

In the London hospitals, and particularly in the Glasgow hospitals, the nurses in charge of the patients see the friends and answer all inquiries. At the South Department the

resident physician or one of the assistant resident physicians, between the hours of 9 and 10 A.M. and 2 and 3 P.M., see the friends and give the condition of the individual patients, the possibility of complications and the probable date of discharge. These remarks do not apply to patients who are dangerously ill, as in these cases at all times the information is freely given regarding the condition of the patient and the possibility of complications.

There is no prohibition regarding patients writing to their friends. The letters are disinfected by heat, and in no instance has infection been transmitted by these letters.

The children are abundantly supplied with toys, in some instances purchased by the hospital, in others given by former patients and friends of the hospital.

As an illustration of the foregoing statement it is sufficient to say that every Christmas trees lighted by electric bulbs, and from which are suspended gifts for each patient, are placed in the four large convalescent wards.

Illustration I is that of a patient who was admitted in a moribund condition. He had been ill for some time before admission. He had stopped breathing, and only by prompt intubation and artificial respiration was he called back to life. This picture was taken a few days before he was discharged well. Illustrations II and III are of a child whose condition at the time of his admission gave no possible hope of his recovery, as he had an extremely severe attack of laryngeal diphtheria. He was discharged well. These pictures were taken a few days before he left the hospital.

In conclusion, it must be conceded from what has been written that the South Department has done a beneficent work in the saving of human life and the relief of suffering. If it had not been for the persistent work of the Board of Trustees of the Boston City Hospital the South Department would not have been in existence.

IV.

EXTRACTS FROM THE STAFF AND TRUSTEES' RECORDS; HISTORY OF THE HOSPITAL STAFF.

By David W. Cheever, M.D.

A meeting of the Visiting Physicians and Surgeons, elect, of the City Hospital of Boston, convened on February 24, 1864, at No. 11 Arlington street, the residence of the Senior Physician, Dr. John Homans, at which the following gentlemen were present:

Visiting Physicians.

Dr. John Homans.	* Dr. J. B. Upham.
Dr. W. W. Morland.	Dr. J. N. Borland.
Dr. F. E. Oliver.	Dr. J. G. Blake.

Visiting Surgeons.

Dr. C. H. Stedman.	Dr. C. D. Homans.
Dr. C. E. Buckingham.	Dr. A. Coolidge.
Dr. D. McB. Thaxter.	Dr. D. W. Cheever.

Ophthalmic Surgeon.

Dr. H. W. Williams.

Dr. John Homans was elected Chairman, and Dr. J. N. Borland, Secretary.

Services of four months each were arranged; public patients were to be assigned to the physicians in turn; one pavilion to be medical and one surgical.

The Suffolk District Medical Society was invited to visit and inspect the Hospital May 21.

March 10, 1864. A special meeting was held at the rooms of the Massachusetts Medical Society to examine candidates, graduates in medicine, for the position of House Officers. In consequence of the exigencies of the Army and Navy

* Dr. J. B. Upham (absent).

Services during the Civil War, the graduating class had largely entered those services, and no candidates presented themselves.

The Trustees were then requested to allow students in the third year of their studies to present themselves as candidates for House Officers.

April 1, 1864. An examination was held, and six candidates appeared. Positions were assigned as follows:

House Surgeons.

M. F. Gavin. D. F. Lincoln.

House Physicians.

John Dole. C. J. Blake.

Ophthalmic Externe.

Ed. G. Loring.

Committees reported on a diet; on a formulary for medicines; on hours of visits; on a morgue; on a pathologist.

June 14, 1864. An Obstetric Department was recommended.

July 13, 1864. Dr. C. W. Swan was appointed Pathologist.

October 12, 1864 — four months after opening — the urgent necessity of Foul Wards, for offensive and infectious cases, was explained to the Board of Trustees.

February, 1865. Dr. John Homans resigned. Dr. John P. Reynolds was appointed Visiting Physician.

Foul Wards K and L again advised.

July 12, 1865. Voted, Unless in emergencies, vaginal examinations are not to be made by House Officers.

September 27, 1865. The Trustees of the N. E. Female Medical College request admission for their students to the wards of the City Hospital. The Staff voted to advise our Trustees to decline.

January 11, 1866. A Lying-In Pavilion advised. Sixteen candidates applied as House Officers.

1866. Dilatoriness in answering prescriptions ordered was complained of — twenty-four hours elapsing sometimes.

Dr. Wadsworth appointed Ophthalmic Assistant.

April, 1866. Mrs. Batchelder, a student of medicine for two years, asked for admission to the visits in the female wards.

Referred to Drs. Buckingham and Cheever, who reported as follows:

"That it shall be a rule of the Association of Physicians and Surgeons of the Boston City Hospital that no female practitioner of medicine and no female medical student, as such, shall be admitted to visit the wards of the hospital under any circumstances whatever." This was unanimously adopted.

In June, 1866, Dr. C. H. Stedman died.

On July 2, 1866, it was voted as the sense of the meeting, "that the medical opinions of the Staff should be taken into consideration by the Trustees in the selection of members of the Hospital Staff, and that this resolution be transmitted to the Trustees."*

October, 1866. Dr. Gould died.

Dr. William H. Thorndike elected Visiting Surgeon.

A Surgical Out-Patient Department considered.

October 12, 1866. The Staff agrees to assume charge of a pavilion for Cholera.

1867. Dr. Buckingham resigned. There is an annual dinner. Dr. Derby succeeded Dr. Buckingham. Dr. Ropes made Out-Patient Surgeon. Dr. Coolidge resigned.

1868. A Department (Out-Patient) for Diseases of the Skin created. Dr. Damon put in charge.

An Aural Department created. Dr. J. O. Green in charge.

Diplomas engraved for House Officers.

Dr. Upham resigned. Dr. Fifield appointed.

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* With scarcely more than one exception, or with some minor differences as to rank and order, it has been the custom of the Trustees, from the beginning, to informally ask the opinions and suggestions of the Staff as to the appointments of their colleagues.

Later, the power of nomination was entrusted to the Staff; has been carefully and conscientiously conducted for many years; and has been altered, or temporarily "referred back" by the Trustees in not more than four instances out of over one hundred appointments.

In 1880, the Trustees were incorporated.

The power of nomination was given to the Hospital Staff by the Trustees before their incorporation, and is as follows:

A vacancy is notified and two names are requested in order of preference; the Medical Department chooses its candidates; the Surgical likewise; and the Gynæcological. They must all be passed on by the Senior Staff; and then sent to the Trustees; the Trustees may transpose them (two instances); may return them not acted on (one instance); may elect one not nominated (one instance).

In only four instances were the wishes of the Staff disregarded; and all these appointments were of suitable persons. Two out of the four were nominations of the Staff, but not for first place. A self-respecting profession has held the respect of others. It is also noteworthy that this confidence in the Staff has coincided with an unusual harmony of all its members. No serious schism has occurred.

1868. First Medical and Surgical Report authorized.

1869. Dr. Ropes died.

1870. Dr. Ingalls appointed.

Female students again refused admission.

November 30, 1870. It was voted "that no operations should be performed, no incisions be made, and no important dislocations be reduced in the Out-Patient Department, except at the request of the Visiting Surgeon on duty."

1871. Dr. H. I. Bowditch resigned. Dr. Hall Curtis appointed. Drs. Lyman and C. E. Stedman appointed. Dr. Sinclair resigned. Dr. William Read appointed.

1872. In answer to Trustees, a medical man recommended as Superintendent.

1872. Dr. Cowles elected Superintendent. Dr. Thaxter resigned. Dr. Gay appointed.

1873. Female students refused.

Medical Out-Patient Department. Division for Diseases of Women.

1874. Drs. Boardman and Aiken appointed for Diseases of Women.

1876. Throat Department authorized.

Dr. E. W. Cushing appointed.

1878. Training School for Nurses established.

Twelve House Officers for 18 months elected.

1879. Dr. Rowe Superintendent.

1883. Dr. Ingalls resigned.

1884. Dr. Bolles appointed. Female students refused. Twentieth Anniversary dinner. Twenty-nine present.

1884. Dr. Forster elected by Trustees over Dr. Rotch.

Dr. Bixby resigned from Department of Diseases of Women.

Dr. C. M. Green appointed Physician for Diseases of Women, Out-Patient Department.

Dr. Fifield resigned.

1885. Dr. Thorndike died.

Drs. Bradford and Post elected.

November, 1885. Department of Diseases of Women recommended by Dr. Draper. Committee reported inexpedient.

1886. Dr. Cheever resigned full service as Visiting Surgeon. Drs. Homans and Cheever made Senior Surgeons, with each two months' service.

Dr. Draper resigned and became Medico-Legal Pathologist.

September, 1886. Dr. Homans died.

1889. Department for Diseases of Women agitated, but not established.

Drs. Haven and Kingman appointed for Diseases of Women.

Dr. Rotch asks admission for female students.

Long discussion on contagion.

Third Surgical Service established.

May, 1890. Dr. C. M. Green, Assistants and Colleagues appointed for Diseases of Women.

The title of President of the Visiting Staff established.

Thirty candidates for House Officers.

1890. A separate Gynæcological Service considered.

July 6, 1891. Dr. H. W. Williams resigned.

Dr. David W. Cheever elected President of the Visiting Staff.

August, 1891. Dr. Lyman died. Dr. Gannett resigned. Drs. Sears and Mallory succeed him.

1891. Dr. John G. Blake elected Vice-President of the Visiting Staff.

1892. A Gynæcological Department created by the Trustees.

March, 1892. The Visiting Staff asks the Trustees "whether the Gynæcological Service is to continue, as at present, excluding the grave operations of abdominal surgery?"

Reply: "The Trustees do not propose to change the existing order of things."

1892. Drs. J. G. Blake and Forster nominated for the Gynæcological Department.

Dr. Davenport Assistant Physician for Diseases of Women.

1892. New Contagious wards recommended.

Dr. Councilman made Pathologist.

Dr. E. M. Buckingham elected Visiting Physician, and Dr. C. M. Green to the Gynæcological Department.

1893. A Contagious Department recommended.

Dr. Bradford resigned. Dr. Watson elected.

1895. Dr. H. W. Williams died.

Drs. Sumner and Rotch resigned.

1898. Terms of House Officers made two years.

An X-Ray Service begun. Statistics (records) condemned.

A Training School for orderlies recommended to Trustees.

1899. Dr. Folsom resigned.

Advisory Committee on South Department established.

1899. Dr. Gay resigned as Visiting Surgeon and became a Senior Surgeon.

1899. Dr. Lovett resigned.

Name of Staff changed from Visiting Staff to Senior Staff by Trustees.

Medical, Surgical Gynæcological, etc., Departments created, to report annually to the Trustees.

Physicians in charge of Skin and Nervous Departments put in Senior Staff by Trustees.

Staff remonstrates, as they were not consulted, and also because these Departments have no beds.

Reconsideration asked: Trustees decline.

1899. Complaint of poor accommodations of Medical House Officers and of Visiting Physicians.

Trustees in want of money; but promise later consideration.

1899–1900. Shall Medical Out-Patient Service be open daily and evenings?

Committee reports that evening clinic would be enormous and objectionable; expensive and unnecessary. Emergency Station should suffice; favor daily Medical Clinic.

Dr. Post dissents in a minority report, favoring evenings.

Trustees advise the Staff on the dangers of etherization in the Out-Patient Department unless under proper supervision.

This evil corrected.

Beds on Surgical side asked for Ophthalmological Department.

1900. Dr. John G. Blake resigned and was made a Senior Physician.

Dr. C. M. Green was made Senior in the Gynæcological Department.

Committee of Conference discharged.

1900. Senior Staff decline to sign Nurses' diplomas, because they (Staff) do not have control of the examinations.

November, 1900. Daily Medical Out-Patient Clinic established.

Committee appointed to confer wiith Trustees and Superintendent on better accommodations for Physicians and House Officers. Trustees report lack of money, but promise for the future.

Dr. V. Y. Bowditch resigned.

Female House Officers declined.

Committee of Staff appointed to obtain more knowledge of candidates.

December, 1900. Revised formulary adopted. Shall medicines be furnished Out-Patients at a nominal charge?

Trustees criticise visits by students, outside of regular hours.

June, 1901. Trustees vote it inexpedient to furnish medicines to Out-Patients at a nominal charge.

1901. Remonstrance of Staff to Trustees on plans for Medical House Officers not being submitted to a Committee of the Staff, before adoption.

New rules on records.

Committee of Staff requested by Trustees to consider plans of new Wards K and L; they report entire satisfaction, and a credit to the Superintendent.

Conference requested by Trustees on new Relief Station.

December, 1901. Closing of the Out-Patient Department on account of Smallpox; and quarantine of several wards.

January, 1902. Drs. Jackson and Arnold appointed.

Planning for Relief Station; Surgeons and House Officers.

Dr. Buckingham, Secretary of the Senior Staff, requested each member of the Staff to furnish the library with a list of his publications.

Regulations for Vaccinating visitors.

March, 1902. Dr. Edward Reynolds resigned.

Smallpox quarantine over.

Dr. Edwin W. Dwight resigned.

Request to open the library evenings and Sundays.

An Executive Committee appointed.

Clinical Club reorganized.

Union of Aural and Throat Departments not expedient.

Dr. Mason made a Senior Physician.

1903. Dr. McCollom made Consulting Physician for Contagious Diseases.

March, 1903. Dr. Leland made Visiting Aural Surgeon.

The Burnham bequest discussed.

May, 1903. Drs. Munro and Bottomley resigned.

A Measles ward advised.

Delay in treating Out-Patients complained of.

Dr. Haven died.

Plans for an X-Ray Department, under Dr. F. H. Williams.

December, 1903. Dr. Bradford (Consulting Surgeon) offers his services as adviser in Orthopedic cases; accepted.

Dr. Ingalls died.

Dr. Higgins resigned.

1904. Dr. Gay (from Committee) reports an abuse of charity in the Out-Patient Department; approved and sent to the Trustees.

June, 1904. Fortieth Anniversary celebrated by opening the new Surgical Out-Patient Building.

A History of the Hospital discussed; $3,000 asked of Trustees, to publish it; put in hands of a Committee, Drs. Cheever, Gay, Mason and J. B. Blake.

X-Ray Service organized.

Library opened evenings.

Reform of Training School agitated.

Excerpts from the Trustees' Records.

The first meeting of the Trustees was held on March 10, 1863. At the meeting of March 31 a petition was received from Dr. A. J. Bellows *et als.*, asking that a portion of the Hospital be set apart for the practice of Homœopathy. Dr. O. S. Saunders addressed the Trustees on the subject. Dr. Oliver W. Holmes was invited to give his views upon the matter, which he did at the meeting of April 14. On April 22, Dr. Bellows submitted a series of questions to Dr. Holmes, which were laid on the table (indefinitely).

September 29, 1863. The Mayor and Aldermen petitioned to remove the bone factory on "Pine Island."

January 26, 1864. Dr. Lawrence and Mr. Crosby made a full and candid report on the plan of admitting Homœopathy to the Hospital, and recommended that the plan be not accepted.

March 15. Letters from Drs. Bellows and Cross on the Homœopathy matter received and placed on file. Two weeks later another letter from Dr. Bellows, which with all the others were referred to Dr. Lawrence and Messrs. Cumston and Crosby.

June 28. Voted that circuses and menageries on the fair grounds adjacent to the Hospital are prejudicial to patients.

July 19. Voted that no patient, except accident or emergency cases, be admitted to the Hospital who cannot give a satisfactory reference as to character when requested to do so.

December 13, 1864. Dr. Lawrence reported against setting apart any of the Hospital for the use of Homœopathy.

December 20. Association of Physicians and Surgeons voted it to be inconsistent with safety to admit any more cases of erysipelas with the present accommodations.

July 17, 1866. Death of nurse, Miss Theresa M. Bragg, of typhus or ship fever.

October 9. Voted that Friday be the public surgical day, and Tuesday the public day for medical visits.

July 11, 1865. Report from Dr. Lawrence on Homœopathy in the Hospitals of Paris.

December 10, 1867. Voted to investigate the ability of patients to pay something for board and nursing.

V.

THE TRUSTEES OF THE BOSTON CITY HOSPITAL.

By George W. Gay, M.D.

The Boston City Hospital is at present managed by a Board of five trustees, appointed by the Mayor, and confirmed by the Board of Aldermen. As originally created, in 1863, the Board consisted of eight members, two from the Board of Aldermen, three from the Common Council and three citizens at large, who were elected by the Council. Four years later, another member was added, making nine in all, selected as follows: One from the Aldermen, two from the Council and six at large.

This arrangement continued until the Board of Trustees was incorporated by act of the Legislature, in 1880, when the number was reduced to seven, five to be citizens at large, not members of the City Council, and appointed by the Mayor, and one Alderman and one Councilman elected by the Council. In 1885, under the new city charter, the members of the Council were abolished, and the Board reduced to its present numerical size, all appointments by the Mayor for terms of five years, and no member of the City Council being eligible.

The first Board of Trustees, appointed in 1863, consisted of Thomas C. Amory, Jr., President, and Hon. Otis Norcross from the Board of Aldermen; Joseph Buckley, Lucius A. Cutler and David H. Coolidge, Secretary, from the Common Council; Theodore Metcalf, Sumner Crosby and Dr. William R. Lawrence, at large. Andrew Carney, the founder of Carney Hospital, was appointed to the Board, but as he declined to serve, Mr. Metcalf, the well-known druggist, was chosen in his place, and served most faithfully for nine years.

THE FIRST BOARD OF TRUSTEES, 1863–64.

With three exceptions, the *personnel* of the Board remained the same during the second year. George W. Warren, from the Board of Aldermen, took Mr. Amory's place, and John Tisdale Bradlee, from the Council, succeeded Mr. Cutler, who had been chosen Superintendent of the Hospital. William Cumston succeeded Mr. Buckley from the Council. Hon. Otis Norcross was elected President of the Board, and received the keys of the Hospital at the dedication, on May 24, 1864.

The first meeting of the trustees of the Hospital was held in "the Mayor's room, at City Hall, in Mechanics' Building, Bedford Street," at 4 P.M., on Tuesday, March 10, 1863. No meetings were held at the Hospital until the following June. The meetings were held weekly from the first, and special meetings were occasionally necessary to enable the trustees to accomplish the large amount of work incident to the inauguration of a great hospital.

There have been seventy-five trustees upon the Board during the first forty years of its existence. Mr. Sprague has the honor of having served the longest of anyone, nearly thirty years. Mr. Shuman comes next, having just been appointed to his fifth quinquennial term of continuous service. Mr. Pope, Mr. Dacey and Mr. Tucker were on the Board for thirteen years or over. The terms of the other members varied from one to nine years.

The trustees of the Boston City Hospital have always endeavored to keep abreast of the time and occasion. This has necessitated constant changes in the existing plant, and an almost continuous enlargement of the facilities for accomplishing the ever increasing amount of work at hand. The marvellous advances made in medicine and surgery during the last twenty-five years, the greater readiness with which the sick and injured resort to hospitals, together with the growth of the city, have all conspired to the rapid development of the institution to its present huge proportions, and the end is not yet.

The discovery of antiseptics has revolutionized surgery. It has not only greatly increased the amount of surgery to be done, but it has created a demand for more and better facili-

ties for doing it. The result is that in place of one small, inaccessible operating room in the cupola, we now have ten up-to-date rooms on the ground floor furnished with all the modern conveniences for doing the best surgical work of the day.

The use of antitoxin in the treatment of diphtheria has been brought to a degree of perfection in this Hospital that is second to none other in this country. The process comes as near being a perfect specific as we shall probably ever see in the management of any disease. An account of its marvellous results will be found elsewhere in this volume.

It having been demonstrated to the community that contagious affections have better facilities for proper treatment in a well-appointed hospital than in the ordinary home, a larger proportion of the cases in this city are sent to the Hospital than ever before, thus calling for more room. This demand was so urgent that seven large buildings were erected adjacent to the Hospital, and are known as the "South Department of the Boston City Hospital." They furnish accommodations for upwards of 300 patients, and have proved to be one of the most important departments of the institution.

Three homes for nurses have been erected in recent years capable of furnishing comfortable quarters to 160 inmates, and are acknowledged to be a most valuable addition to the Hospital.

Another important addition to the institution is the Relief Station in Haymarket square. While it has been open only about two years, yet during the past twelve months over 27,000 persons received first aid within its walls, thus demonstrating its great usefulness in that part of the city.

Besides the above mentioned buildings many others have been erected to keep pace with the ever increasing demand for better facilities, among which attention may be called to two large out-patient buildings, several wards, K, L and M being especially noticeable, the medical library, pathological building, mortuary and mortuary chapel, laundry and engine-room, kitchen and bakery, cold storage and ice plant, electric light and power plant, the largest heating plant in New England, and also one of the largest ambulance services in the country, etc., etc.

The present Board of Trustees have had the pleasure of witnessing the culmination of forty years' growth of the Hospital. Beginning with eight buildings, six wards and 168 beds, the institution now has 35 buildings, an equal number of wards, and 935 beds. The first staff comprised 21 physicians and surgeons and five house officers. There are now 81 physicians and surgeons, 47 house officers and 206 nurses and orderlies. Less than 2,000 patients received treatment during the first year of the Hospital's existence. Last year over 12,000 house patients and more than 60,000 out-patients were cared for in the various departments. The growth has been steady and progressive, until the Hospital to-day occupies a leading position among municipal institutions of its class in this country.

The Boston City Hospital was established for the purpose of giving temporary aid to the sick and injured citizens of Boston who are unable to pay for such services in their homes or places of residence. As the institution is supported by the taxpayers of the city, it cannot be expected to care for non-residents without compensation. Under any other plan the objects for which it exists would be defeated, the worthy poor, who are legal residents, would be crowded out, and it would be the resort of great numbers of those who have no claims upon the city, but are only too ready to accept charity from any source.

As in most hospitals, the rule here has always been that all who are able are expected to pay something for their board and nursing. Yet before the Hospital had been in existence many years it was found upon careful investigation that many of the inmates had no legal residence in the city, and therefore had no claim for free service here. After much consideration of the subject, and many conferences between the trustees and city and State authorities, extending over several years, an arrangement was finally made whereby the State pays for the board of all those patients who have no legal residence in any city or town of the Commonwealth, or no one to pay their bills for them. The cities and towns of course pay for their own citizens when called upon to do so. This plan has now been in operation

many years, and saves about sixty thousand dollars annually to the city.

The City of Boston has been peculiarly fortunate in the character of the men chosen to manage its great municipal Hospital. Faithful, zealous, high-minded, never losing sight of the humanitarian objects for which the Hospital was created, and serving without compensation, they deserve the highest commendation of the community for the noble work that they have done in caring for the sick and injured people committed to their charge.

That they have possessed the confidence of the city government is made evident by the large sums of money that have, from time to time, been appropriated to carry on the work, and to develop and maintain the institution in the front rank of municipal hospitals of this country. They have conducted it upon the broad and generous plan of doing the greatest good to the greatest number compatible with the purposes for which the Hospital was established and is supported.

The confidence of the public has also been manifested in a most encouraging manner, as shown by the number of legacies made to the institution. They now amount to over four hundred thousand dollars. These gifts are particularly gratifying from the fact that municipal institutions, supported by taxation, are not as likely to be the recipients of donations as are the private charities.

The following list comprises the names of all those gentlemen who have served upon the Board of Trustees during the first forty years, supplemented by a brief sketch of those who were on the first Board, and also of those who have acted as President or Secretary of the Board.

Trustees of the Boston City Hospital from 1863 to 1904:

	Appointed.	In Office.
Thomas C. Amory, Jr., President. (Alderman) .	1863	1 Year.
Otis Norcross, President. (Alderman) . .	1863	4 Years.
Joseph Buckley. (Common Council) . . .	1863	1 Year.
Lucius A. Cutler. (Common Council) . .	1863	1 "
David H. Coolidge, Secretary. (Common Council)	1863	6 Years.
Theodore Metcalf. (At Large)	1863	9 "
Sumner Crosby. (At Large)	1863	3 "

	Appointed.	In Office.
William R. Lawrence, M.D. (At Large)	1863	2 Years.
George W. Warren. (Alderman)	1864	1 Year.
William Cumston. (Common Council)	1864	1 "
John T. Bradlee, President. (Common Council),	1864	8 Years.
N. C. Nash. (Alderman)	1865	5 "
Thomas Gaffield. (Alderman)	1865	2 "
Moses W. Richardson. (Common Council)	1865	2 "
Walbridge A. Field, Secretary. (Common Council)	1865	3 "
Matthias Rich. (Common Council)	1866	1 Year.
Newton Talbot. (Alderman)	1867	3 Years.
Charles H. Allen. (Common Council)	1867	1 Year.
Joel Richards	1867	5 Years.
Jonas Ball	1867	2 "
Samuel T. Snow. (Common Council)	1868	4 "
Samuel Rice. (Common Council)	1868	1 Year.
James Guild	1868	4 Years.
Thomas L. Jenks. (Common Council)	1869	5 "
Henry L. Pierce. (Alderman)	1870	2 "
George E. Learned. (Common Council)	1870	1 Year.
Thomas W. Brown, Jr. (Common Council)	1870	2 Years.
Stephen L. Emery. (Common Council)	1871	2 "
Washington L. Prescott. (Common Council)	1872	1 Year.
Elijah C. Drew, M.D., President	1872	3 Years.
William A. Rust, M.D., Secretary	1872	6 "
George W. Pope, President	1872	13 "
Charles J. Prescott. (Alderman)	1872	3 "
Patrick A. Collins	1872	1 Year.
John Goldthwaite	1873	6 Years.
James Power. (Alderman)	1873	1 Year.
Timothy J. Dacey, President. (Common Council),	1873	15 Years.
James F. Marston. (Common Council)	1873	1 Year.
William H. Kent, President. (Common Council),	1874	4 Years.
Hillman Barnes. (Common Council)	1874	1 Year.
Asa H. Caton. (Common Council)	1874	1 "
Hugh O'Brien. (Alderman)	1875	3 Years.
Otis H. Pierce. (Common Council)	1875	2 "
Henry H. Sprague, Secretary. (Common Council)	1875	30 "
Francis F. Emery	1876	3 "
James H. Upham. (Common Council)	1877	2 "
John Kelley. (Common Council)	1877	1 Year.
*S. C. Perkins. (Alderman)	1878	3 Months.
Lewis C. Whiton. (Alderman)	1878	1 Year.
P. S. Roberts. (Common Council)	1878	1 "
C. J. Spenceley. (Common Council)	1878	1 "
P. F. McGarrigle. (Common Council)	1879	1 "
James A. Tucker, President. (Alderman)	1879	13 Years.
J. J. Barry. (Common Council)	1879	1 Year.

* Died.

	Appointed.	In Office.
Benjamin F. Stacey. (Common Council)	1879	3 Years.
M. F. Gavin, M.D.	1879	6 "
Israel Cohen	1879	1 Year.
John P. Hilton. (Common Council)	1880	4 Years.
George H. Wyman. (Common Council)	1880	1 Year.
Clinton White. (Alderman)	1881	1 "
Cyrus S. Haldeman. (Alderman)	1882	1 "
Andrew J. Hall. (Alderman)	1883	1 "
Benj. F. Cutter. (Alderman)	1884	1 "
Edward J. Hathorne. (Common Council)	1884	1 "
A. Shuman, President	1885	
John F. Young, M.D.	1885	6 Years.
George B. Nichols	1888	7 "
William A. Dunn, M.D.	1892	5 "
Conrad J. Rueter, Secretary	1895	
M. J. O'Dwyer	1896	6 Months.
Lamont G. Burnham	1896	6 Years.
Francis J. Keany, M.D.	1897	
Edmund D. Codman	1903	

THOMAS COFFIN AMORY, JR., son of Jonathan and Mehitable Sullivan Amory, was born in the old mansion on the corner of Beacon and Park streets, Boston, October 16, 1812. He attended the famous Round Hill school at Northampton, and was graduated from Harvard College in 1830. He studied law and became interested in public affairs, in which he rendered signal service for many years.

Mr. Amory was a member of the Board of Aldermen in 1858, and of the Legislature in 1859. With Mr. Norcross he represented the Board of Aldermen upon the first Board of Trustees of this Hospital, and was its first President. He delivered the oration at the dedication of the Hospital on May 24, 1864.

He was also much interested in various other city charities, giving valuable aid in the erection of the Charity Building in Chardon street. "During the war he rendered magnificent service to the city in his position on the Board of Aldermen." He also took a leading part in quelling the draft riots in 1862, at the risk of his own safety. He was the author of many papers of a historic-genealogical character, and of reports on "county relations, ordinances, primary meetings, weights and measures, street widening, city charities, State aid to volunteers, the police force, and the

methods of supplying soldiers for Massachusetts," etc. He died at his Commonwealth avenue home, August 20, 1889.

HON. OTIS NORCROSS, for many years one of Boston's leading citizens, served on the Board of Trustees of this Hospital during the first four years of its existence with his habitual painstaking fidelity. He succeeded Mr. Amory as President of the Board, and occupied that position until he retired. He gave much time and thought to the new institution, and was one of its earliest benefactors, giving it a portion of his salary as Mayor of the city.

Mr. Norcross was born in Fleet street, Boston, in 1811, and entered his father's store in South Market street when fourteen years of age. In due time he became a member of the firm of "Otis Norcross & Co.," and spent his entire business life of forty-one years in that store, retiring in 1867, in which year he was elected Mayor of the city. Mr. Norcross devoted the remainder of his long life to the many and various important trusts and duties of a public and private nature that were placed in his charge. He was "Mayor, Alderman, School Committee man, in the House of Industry, on the Board of Trade, the Water Board, Soldiers' Fund, State Charities, Home for Aged Men or Women, Recruiting Offices, Mt. Auburn Cemetery, Natural History Society, City Hospital, Governor's Council, Museum of Fine Arts, Young Men's Christian Union, and a score beside." In short, it is not too much to say that for many years his name and his work stood at the head of a large proportion of the important measures of the day, some of which were of a national character.

The following lines from his own hand are worthy of a permanent record: "During all my connection with the city government from 1862 to 1868, I never received a dollar to my use, directly or indirectly. I never sold the city a dollar's worth of merchandise or made a contract with the city of any kind, directly or indirectly. I never put a friend or a relation into office of any kind." Fortunate indeed is any community that has such citizens in its midst.

Mr. Norcross died in Boston, September 5, 1882, of heart disease, and was buried at Mt. Auburn.

MR. DAVID H. COOLIDGE, the only surviving member of the first Board of Trustees of the City Hospital, was born in Boston in 1833, was graduated from Harvard College, studied law and was admitted to the Suffolk Bar in 1857. Mr. Coolidge was a member of the City Council in 1863–64, and was one of the three gentlemen chosen to represent that body on the first Board of Trustees. He was on the Board six years, and served as the first Secretary. He was a member of the Legislature in 1865. He held the office of Director and Clerk of the Home for Aged Men for forty-three years, and for many years occupied a similar position in the Boston and Sandwich Glass Company, has been a Director in the Mattapan Deposit and Trust Company since its formation, and for fifteen years was Commissioner of Insolvency. He served this Hospital faithfully and well in its formative period, and his records testify to the large amount of most excellent work done here.

DR. WILLIAM RICHARDS LAWRENCE was born in Boston in 1812. He was educated at the Lawrence Academy in Groton, the Dummer Academy in Byfield, the oldest in the State, the Boston Latin School, and in Europe. He was abroad four years, and saw a good deal of the revolution in Paris in 1830, when Charles X. was dethroned and Louis Phillipe was made King. On his return to this country he entered the counting-room of Messrs. A. & A. Lawrence, but soon gave up business, and began the study of medicine at the Harvard Medical School, from which he was graduated in 1844. After "walking the hospitals" of Europe a year or more, he returned to his native city, and established a hospital for children on the "neck" in the vicinity of Washington street and Union Park. He conducted this useful charity successfully for some years.

Dr. Lawrence was much interested in the City Hospital, and gave freely of his time and energies during its organization and the first two years of its existence. He rendered

especial service in the consideration of the question of setting apart a portion of the Hospital for the exclusive use of "Homœopathists," and after very careful investigation reported that it would be inexpedient to have the two "schools" in the same institution, a decision that probably every one at all familiar with the facts in the case will now acknowledge was the wisest conclusion possible under the circumstances.

Dr. Lawrence rejuvenated the Boston Dispensary in the middle of the last century, and was made a life member of the corporation. He was an original member of the "Warren Club," now known as the "Thursday Evening Club," which was founded in 1847. He also held various other important positions, and was very much interested in the affairs of the Episcopal church. He was instrumental in founding three Episcopal societies, namely, St. John's in Jamaica Plain, The Emanuel in Boston, and with his brother established the Church of Our Saviour in Longwood, as a memorial to their father.

In 1838, Dr. Lawrence married Miss Susan Coombs Dana, who with her three sons built a chapel for St. Luke's Convalescent Home in Roxbury in commemoration of the doctor, after his death, thus testifying to the great interest he had always manifested in that excellent institution. He died of paraplegia, at Swampscott, in 1885.

Hon. Sumner Crosby was born in Billerica, Mass., in 1801, and died in Boston in 1875. A descendant of good old Puritan stock, his ancestor came to this country in 1634, and settled in Cambridge, corner of Brattle street and Brattle square. The Crosby farm in Billerica has been in this family for nearly 250 years, and was one of the "original grants" from Cambridge.

The subject of this sketch came to Boston in 1820, and went into business at the West End. In 1853 he moved to South Boston and established the flour and grain business that is so well known to-day. Mr. Crosby was greatly interested in the establishing of this Hospital, was a trustee for three years, serving on the building and other committees.

"For several years he was a member of the Boston Common Council, and both branches of the Legislature, the Council in 1864, 1865, 1866, House in 1867 and Senate in 1868. In whatever capacity he served, it was with that strict regard for the public good that characterized the service of men of his day. He was also a trustee in the South Boston Savings Bank, was prominent in church affairs, and his services were freely given in aid of the soldiers during the War of the Rebellion. He was greatly beloved by all sorts and conditions of men."

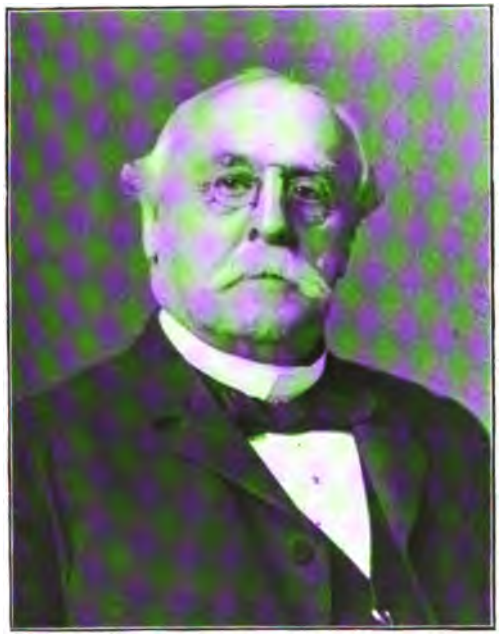
MR. JOSEPH BUCKLEY, born in 1810, died in 1876, was long identified with the furniture business of this city, being the founder of the firm of "Buckley & Bancroft," that many of the older readers will remember. He served in many important positions, among which was the Common Council in 1855–6, and again in 1862–3. He was a member of the first Board of Trustees of this Hospital from the Common Council, and the records indicate that he rendered faithful and valuable service to the young institution.

JONAS BALL, ESQ., was born in Northboro, Mass., in 1817. His father, grandfather and several brothers were physicians, which might account for his great interest in this Hospital and its inmates. An affection of the eyes prevented his taking a college course, and he entered the wholesale grocery business, becoming a partner in the firm of Henry Callender & Co. Mr. Ball was appointed a trustee in 1867, and remained upon the Board until his death in 1868. He left one thousand dollars for the Clothing Fund of the Hospital, to be added to the one established by Mr. Norcross.

THEODORE METCALF, son of Judge Theron and Julia Tracey Metcalf, was born in Dedham, Mass., in 1812. He attended the public schools in that town, and had for his intimate and life-long friend Mr. Francis Bird, the well-known manufacturer and the central figure in the "Bird Club." Mr. Metcalf learned the drug business in Hartford, and came to Boston in 1837, where he established the

well-known "Metcalf's Apothecary Store," at 39 Tremont street, the present site of the successors to the business.

Various positions of trust were filled by Mr. Metcalf, but none interested him more than his service as trustee of this Hospital. He was on the board nine years, and was Secretary a part of the time. Thoroughly honest, upright, punctual and patient, alive to the best interests of the Hospital, he won the confidence and esteem of his colleagues and the respect of the community.



JOHN T. BRADLEE.

JOHN TISDALE BRADLEE, ESQ., was born in Boston in 1837. He is a merchant, and has long been connected with important institutions in this city. He came upon the Board of Trustees the year the Hospital was opened, and rendered most faithful service for eight years, being president of the Board five years. Mr. Bradlee always took great interest in the Hospital, and devoted much time to it while on the Board, even attending the Sunday services held for the patients and other residents in the Hospital.

Mr. Bradlee has occupied many positions of trust, as Director of the New England Bank for 46 years, Director of the Home for Aged Men 31 years, Trustee of the Public Library and of the Boston Dispensary. He has been a member of both branches of the city government, and still retains his interest in all that pertains to the welfare of his native city.

GEORGE WASHINGTON POPE, ESQ., was born in Kennebunkport, Me., in 1821. He came to Boston when a young man, learned the mason's trade, and became one of our best known and most reliable builders for many years. He built the Emmanuel and Union churches, the Women's Charity Club Hospital, and several of the City Hospital buildings. He was also a member of the committee from the Board of Aldermen that had charge of raising the grade in the Suffolk street district. He devoted much time to this work, and was probably as responsible as any one for the large amount saved to the city in that transaction in the shape of unexpended appropriation, an event so rare that it is worthy of note.

Mr. Pope was president of the Penny Savings Bank, a member of the Mercantile Library Association, Massachusetts Charitable Mechanics' Association, and Vice-President of the Working Men's Building Association. He was much interested in and gave much time to various plans whereby working men were enabled to purchase a home on easy terms, and thus become useful citizens.

Mr. Pope was a trustee of this Hospital for 13 years, and did a great deal of most valuable work here, aside from his duties as trustee, for which of course he received no compensation. He was President of the Board for several years, and his ripe judgment, his technical knowledge and his liberal and kindly thought were always at the service of the Hospital. He died in 1896 age 75 years.

HON. WALBRIDGE ABNER FIELD was born in Springfield, Vt., in 1833, and died in Boston in 1899. He graduated from Dartmouth College in 1855 with the highest rank any

TRUSTEES FOR 1872-73.

Thomas L. Jenks. W. L. Prescott. Patrick A. Collins. Charles J. Prescott.
George W. Pope. S. L. Emery. Elijah C. Drew. Wm. A. Rust. John Goldthwait.

one ever received at that institution with the exception of Rufus Choate, and perhaps one or two others. His marks were perfect throughout the entire course of four years.

Mr. Field graduated from the Harvard Law School and was admitted to the Suffolk Bar in 1860. He was Assistant United States Attorney in 1865–9, and Assistant Attorney-General 1869–70. Leaving Washington in the latter year he returned to Boston, and entered the law firm of Jewell, Gaston & Field, and resumed practice. In 1881 he was appointed Judge of the Supreme Judicial Court, and in 1890 was made Chief Justice of the same. He was a member of the School Committee in 1863–4, of the Common Council in 1865–7, and was a Representative in Congress two years.

He came to this Hospital as trustee from the Common Council in 1865, and held the position for three years, serving as secretary of the Board a part of that time.

WILLIAM APPLETON RUST, M.D., was born in Gorham, Me., in 1823, educated in the academy of that town, and graduated from the medical department of the University of New York in 1846. He practised medicine several years in South Paris, Me., was a trustee of the State Reform School, and United States Inspector of Internal Revenue.

In 1865 he came to Boston and entered the firm of Rust Brothers & Bird, wholesale druggists, in Hanover street, where he remained until 1890. He has been a member of the Legislature, and of the School Board for ten years. He has also been a director in the Blackstone Bank, the Metropolitan Railroad Company, and Vice-President of the Boston Penny Savings Bank. Dr. Rust was a trustee of the City Hospital for six years, and secretary of the Board for some time.

HON. A. SHUMAN, one of Boston's most progressive, liberal and philanthropic men, has been a member of the Board of Trustees for twenty years, and President of the Board for fifteen years.

He is the founder and senior member of the firm of A. Shuman & Co., at the corner of Washington and Summer

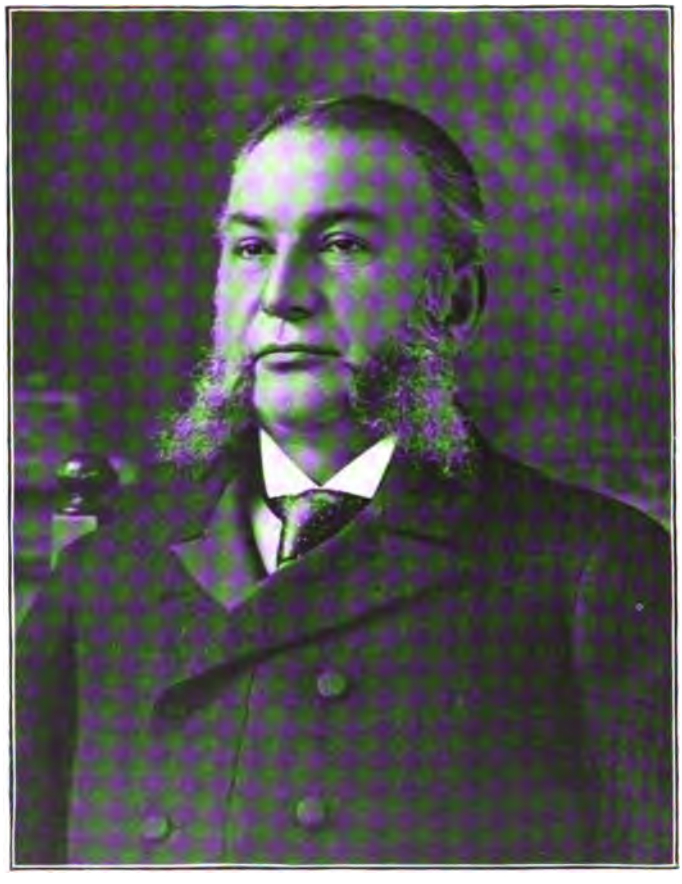
streets, known as the Shuman corner, one of the best known and most valuable business locations in the city.

Mr. Shuman belongs to that splendid group of prominent citizens who have labored so hard and faithfully for the upbuilding of Boston, socially, intellectually and commercially, during the past thirty or forty years, and few Bostonians are more generous of their time and money in connection with civic and philanthropic movements; and whether it be expansion of Boston's commerce or the erection of a new hospital, it is always easy to enlist Mr. Shuman's sympathies and influence.

For twenty years this Hospital has been the recipient of Mr. Shuman's gratuitous services, as is shown by the large sums of money he has succeeded in securing from the city government for new buildings, made possible by the confidence reposed in his ability and integrity to handle the appropriations for the best and highest interest of the municipality. The funds so appropriated have been used with unerring judgment for the many changes necessary to maintain the present high standard of the institution, and it has always been his ambition to keep this Hospital in the front rank of similar municipal charities as regards the care of the sick and injured poor committed to its charge.

During his administration the capacity of the Hospital has increased nearly fourfold, and the new Hospital for Contagious Diseases, the Convalescent Home and the Relief Station in Haymarket square have been constructed. Indeed, the Hospital has always been one of his favorite philanthropies, and he has given deep thought as well as much time to it, with results that will stand as a monument to his patience and public spirit.

Mr. Shuman was one of the founders and is now the First Vice-President of the Boston Merchants' Association; he is a member of the Chamber of Commerce, and when Mayor Quincy in 1896 decided to form his so-called "Advisory Board," composed of local merchants, Mr. Shuman was promptly selected by the Chamber of Commerce as the representative of that body in the Mayor's cabinet, where his knowledge and experience were of inestimable service. He



A. SHUMAN.

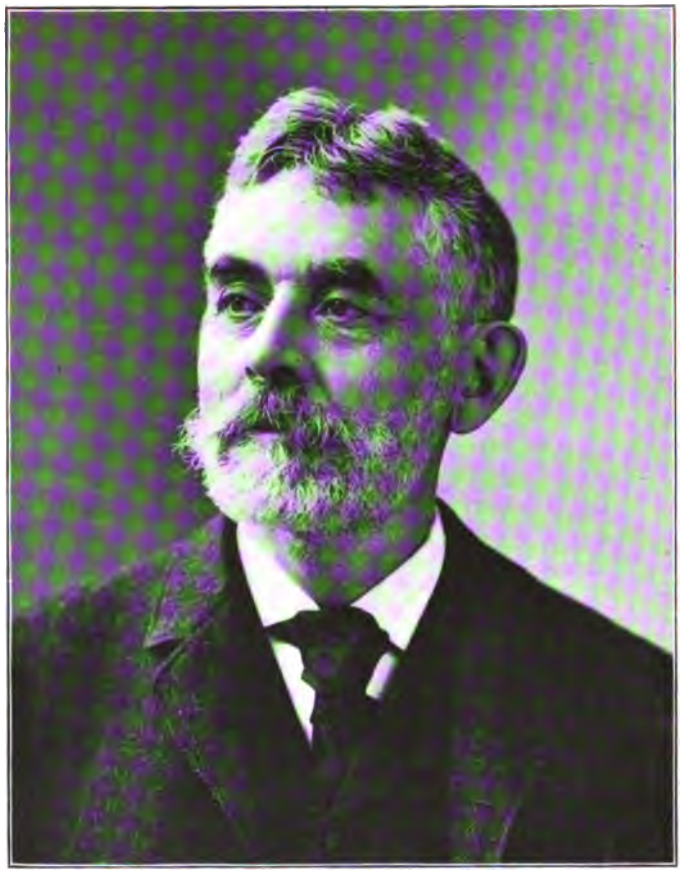
is a director of the Commonwealth and United States Trust Companies, a member of the Beacon Society, Exchange Club, Art Club, Athletic Association, Ancient and Honorable Artillery Company, American Irish Historical Society, Bostonian Society, Dartmouth Educational Association, Massachusetts Reform Club, Massachusetts Charitable Mechanic Association, Massachusetts Horticultural Society, Massachusetts State Conference of Charities, Museum of Fine Arts, Roxbury Charitable Association, Society of Arts of the Institute of Technology, Young Men's Christian Union, and he has recently received the honorary degree of Master of Arts from Tufts College, under the following terms: "Abraham Shuman, successful merchant and man of high public spirit."

HON. HENRY HARRISON SPRAGUE was born in Athol, Mass., in 1841. He graduated from Harvard University in 1864, and after a course of study at the Harvard Law School and in a private office was admitted to the Suffolk Bar in 1868. He has continued the practice of his profession in Boston to the present time.

Mr. Sprague has been in public life almost continuously since his admission to the Bar. He was a member of the Common Council in 1874–5–6, during two of which years he served upon the Board of Trustees of the City Hospital. In 1878 he was chosen trustee-at-large, and has been a member of the Board from that time to the present. For many years he was Secretary of the Board.

He was in the House of Representatives in 1881–2–3, and in the Senate four years — 1888 to 1891. The last two years of his term he was President of that body. After his retirement from the Legislature he served upon several important committees, among which may be instanced one to draft a form of city charter and another to revise the election laws.

Upon the inauguration of the Metropolitan Water Board in 1895 Mr. Sprague was made Chairman, and he also has held the same position since that Board was consolidated with the Metropolitan Sewerage Commission in 1901, forming the present Metropolitan Water and Sewerage Board.



HENRY H. SPRAGUE.

For nearly forty years Mr. Sprague has been a prominent member of and officer of the Young Men's Christian Union. He was also one of the organizers of the Boston Civil Service Reform Association, and for several years was its President. He was a member of the Executive Committee of the Municipal Reform Association, of which he was senior counsel for the purpose of securing the passage by the Legislature of 1885 of the important amendments to the charter of the City of Boston, by which the executive authority of the city was vested more completely in the Mayor. For six years he was an Overseer of Harvard College.

Mr. Sprague has held many other important positions in various organizations, both city and State, and has written several valuable works, among which may be mentioned the following: "Women Under the Law of Massachusetts; Their Rights, Privileges and Disabilities," "City Government in Boston; Its Rise and Development," "Water Supply and Work of the Metropolitan Water Board."

For nearly thirty years Mr. Sprague has been a most valuable member of the Board of Trustees, during which time he has done a vast amount of gratuitous work for the Hospital. Deliberate, careful, conservatively progressive, his first consideration has always been the welfare of the patients committed to the care of the institution. Just and impartial, no matter pertaining to the Hospital has been too trivial to engage his careful attention.

Hon. Hugh O'Brien was born in Ireland in 1827, and died in Boston in 1895. He received his early education in our public schools, graduating from the grammar school that stood on the famous Fort Hill, long since levelled for business purposes. He learned the trade of printing in the office of the "Boston Courier," and at twelve years of age entered the printing establishment of Tuttle, Dennett & Co., of which he became foreman in three years. He afterwards founded the "Shipping and Commercial List," of which he was long the editor and publisher. Elected to the Board of Aldermen in 1875, he was a member

CONRAD J. RUETER.

of that body for several years, during four of which he was Chairman of the Board. He was elected Mayor in 1884, and held the office four years. He was treasurer and general manager of the Brush Electric Light Company, president of the Union Institution for Savings, trustee of the Franklin Typographical Society for fifteen years, trustee of the St. Vincent Orphan Asylum, and for many years was a standard authority on all matters relating to the trade and commerce of the city. He was trustee of this Hospital for three years, coming from the Board of Aldermen.

JOSEPH A. TUCKER was born in Dunstable, Mass., and spent the early years of his life in Pepperell, where he was educated and entered upon his business career. He established the post-office in that town, and was the first postmaster. Came to Boston in 1852, and engaged in mercantile and manufacturing pursuits. Was a member of the Board of Aldermen three years from 1879, and of the School Committee for nine years. He was a member of this Board of Trustees for fourteen years and President of the Board six years. He died in 1892 at his residence in Roxbury.

HON. WILLIAM HENRY KENT was born in Duxbury, Mass., in 1823. Passed his boyhood in Staniford street, Boston, and was a Franklin Medal graduate of the Mayhew School. He was in the lumber business until 1873, when he became President of the Mill Owners' Fire Insurance Company, which he retained to the time of his death in 1889. He was Alderman of Charlestown for five years, and Mayor for three years. After the annexation of that city to Boston he was a member of the Common Council, and also the first President of the Board of License Commissioners. He was appointed a member of the Board of Trustees of this Hospital from the City Council in 1874, and held the position four years, during three of which he was President of the Board. Mr. Kent was an active and prominent man in city affairs, as well as in various private matters. He was a director in the Middlesex railroad and a prominent Mason. "His Masonic record is replete with usefulness, devotion and honor."

FRANCIS J. KEANY, M.D.

DR. ELIJAH C. DREW was born in Maine (?) in 1818, and died in Boston in 1877. Owing to ill-health he was obliged to relinquish the practice of medicine in this part of the country, and he went to Florida, where he became interested in the lumber business, and followed it with success for many years.

Returning to Boston he dealt largely in real estate, building and owning the large block at the South End known for a long time as the "Commonwealth Hotel." He also established the Eleventh Ward National Bank, and was its President during his life. He was a member of the Common Council in 1858, and trustee of this Hospital and President of the Board for three years.

HON. TIMOTHY J. DACEY was born in Boston, October 11, 1849, and died December 15, 1887. Educated in the Eliot Grammar and English High Schools in this city, and at Holy Cross College, Worcester. Graduated from the Harvard Law School, and was admitted to the Bar in 1871. Was a member of the Common Council from old Ward 2 in 1872–3. Was a member of the lower branch of the General Court in 1874, and a member of the Senate the two following years.

He was appointed trustee of this Hospital in 1873, and served in that capacity for fifteen years, occupying the President's chair five years. In 1877 he received the appointment of First Assistant District Attorney, was on the School Board for several years, was identified with a number of political and social organizations, at one time being President of the Charitable Irish Society. He was also a member of the Ancient and Honorable Artillery Company of Boston, and was one of a special committee which visited Great Britain as a guest of the Ancient and Honourable Artillery Company of London on the jubilee anniversary of the latter company.

HON. PATRICK A. COLLINS, the present Mayor of Boston, was trustee of the Hospital from the Common Council in 1872. He was born in Ireland in 1844, and his father dying

EDMUND D. CODMAN.

when he was three years old, the mother brought her family to this country, and settled in Chelsea, Mass. He attended the public schools until he was twelve years of age, and then went to work at various occupations, but chiefly in the upholstering business. Ambitious, hard working, always a student, depending largely upon the Boston Public Library for his books, he began the study of law in 1867, graduated from the Harvard Law School, and was admitted to the Suffolk Bar in 1871. Since that time he has practised his profession in Boston, and is an attorney not only of the State Court, but of the Circuit and Supreme Courts of the United States.

Mr. Collins has served in both branches of the Legislature, been Judge Advocate General of the Commonwealth, Representative to Congress three terms, and was Consul General of the United States in London during Mr. Cleveland's second administration. He has always taken a great interest in politics, and is one of the most prominent members of the Democratic party. Was chosen Mayor in 1901, and is now serving his second term of two years. He takes an active interest in charities and public measures of many kinds, and his influence and aid are to be relied upon for every good cause that his judgment approves.

LAMONT G. BURNHAM, ESQ., was born at Essex, Mass., in 1844, where he lived until the Civil War broke out. He enlisted in Company E, 48th Massachusetts Infantry, when he was only eighteen years of age. After his discharge from this regiment, he again enlisted in Company F, 3d Massachusetts Infantry, and served until the close of the war.

In 1865 Mr. Burnham came to Boston, and entered a coal office as clerk. He advanced rapidly, and in six years established the firm of "L. G. Burnham & Co.," which in time became the largest retail coal firm in New England. In 1898 he organized the Metropolitan Coal Company, and became its President. He was also an active member of the United and

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NOTE.—Since the above sketch of Mayor Collins was written the city has been called to mourn his death, which took place at Hot Springs, Virginia. Hon. John F. Fitzgerald has been elected to the vacancy.

Boston Fruit companies, of the former of which he was one of the organizers.

Mr. Burnham was much interested in military affairs, and held several important positions in the state militia. At various times he was president of the following bodies: Boston Chamber of Commerce, Boston Associated Board of Trade, Boston Lighterage and Towing Company, Roxbury Central Wharf, Commercial Club of Boston. Was director in Mechanics National Bank and in the Boston Merchants' Association. He was generous in many ways to his native town of Essex, and was a public-spirited citizen of the best type. He was by far the largest individual benefactor this Hospital has ever had, in that he left it one hundred and fifty thousand (150,000) dollars for a new building, which will bear testimony to his great generosity for all time. He was a trustee for six years, giving much time and thought to the Hospital.

In 1880, he married Miss May A. Wood of Lowell, who survives him, and who is interested in all of her husband's charitable plans. Mr. Burnham died in 1902.

CONRAD J. RUETER, ESQ., was born in Boston in 1863. Educated in German schools and the Roxbury Latin School. Was graduated from Harvard University in 1884, admitted to Suffolk Bar in 1886. Afterwards studied in the University of Bonn, and settled in Boston, where he is now practising law. Has been a trustee of the Hospital since 1895, and is now secretary of the Board.

FRANCIS J. KEANY, M.D., was born in Boston in 1866. Educated at the public schools, and was graduated from Boston College in 1888 and from Harvard Medical School in 1892. He studied dermatology in Europe three years, and has since been in practice in this city. He has been a trustee of this Hospital since 1897. Is Dermatologist at the Carney Hospital, and is on the Consulting Staff at St. Elizabeth's Hospital.

EDMUND DWIGHT CODMAN, son of Robert and Catherine C. (Hurd) Codman, was born in Boston in 1864. Was graduated

from Harvard College in 1886, and was engaged in the railroad business for thirteen years, the latter part of the time acting as President of the Fitchburg Railroad. Since leaving that business he has practised law and managed estates as trustee. He occupies an important position in the business world, and is particularly interested in the management of hospitals.

VI.

THE SUPERINTENDENTS OF THE BOSTON CITY HOSPITAL.

By George W. Gay, M.D.

The Boston City Hospital has been peculiarly fortunate in having had but three superintendents in the first forty years of its existence. Lucius A. Cutler, Esq., served in that capacity from February, 1864, to July, 1872. He was succeeded by Dr. Edward Cowles, who filled the position with signal ability for seven years, and was followed on June 1, 1879, by Dr. George H. M. Rowe, the present most efficient incumbent, who has just completed a quarter of a century of especially faithful and notable service.

Lucius Augustus Cutler was born in Walpole, N. H., on May 30, 1812. By trade he was a mechanical engineer, and acknowledged to be one of the best in New England in his day. He was one of three judges to award premiums at the World's Fair in New York in 1853.

While being employed in Chickering's piano factory he was elected to the Common Council of this city, and placed upon the Committee on City Hospital. He was thence promoted to the office of superintendent of the institution and labored faithfully and conscientiously in its interests for eight years. On leaving the Hospital he retired to his farm in Brimfield, Mass., where he passed the remainder of his life. He was a member of the Legislature in 1883–84, and died November 30, 1892, aged eighty and a half years.

Edward Cowles, M.D., LL.D., was born in Ryegate, Vt., in 1837. He received his degree of A.M. at Dartmouth College in 1859, and that of M.D. at that college and also at

the College of Physicians and Surgeons in New York in 1863. He at once joined the Medical Corps of the United States Army, and served in various places and capacities for nine years. He served in the Army of the Potomac until the close of the war, and was then for a time Post Surgeon at Fort Warren. Later he was assistant in the medical director's office at General Sheridan's headquarters in New Orleans.

EDWARD COWLES, M.D.

For two years Dr. Cowles was Medical Director of the military district of the Rio Grande in Texas, where he went through an epidemic of cholera, and also one of yellow fever, from the latter of which diseases he suffered a severe attack that nearly cost him his life. After serving as Post Surgeon at Fort Preble for a couple of years he resigned from the army, settled in South Boston and began private practice.

Dr. Cowles was at once appointed to the position of visiting physician to the Carney Hospital, but before he had been in practice many months he was elected superintendent of

the City Hospital, a position that he filled with marked ability for seven years. In 1879 he resigned from this institution to take charge of the McLean Asylum in Somerville (now removed to Waverly). After twenty-four years of most faithful and distinguished service in that position he resigned, and is now engaged in private practice in Boston.

Dr. Cowles' administration in this Hospital was noteworthy for several reasons. Previous to his appointment here very few general hospitals in the country had medical superintendents. One of the first, if not the very first, to adopt this custom, now so generally in vogue, was the Massachusetts General Hospital. The Roosevelt and the New York Hospitals in New York, and the Presbyterian Hospital in Philadelphia, a small hospital with only one pavilion, had tried the experiment of a medical superintendent previous to 1872, but for one reason and another had abandoned it for the time being. Hence the Boston City Hospital may be fairly claimed to be among the first to employ medical men as superintendent continuously for a third of a century.

A great many hospitals in Philadelphia now have medical superintendents, who are also resident physicians. The same custom prevails to some extent in New York, while in New England it has come to be the rule in most general hospitals. The exceptions are few and unimportant.

The Nurses' Training School is another innovation that was introduced under the supervision of Dr. Cowles. While this one was the fifth in order of formation, yet it was the first one to be made an integral part of the Hospital management, as a subdivision of the general whole. The four other training schools were separate organizations from the hospitals, and therefore occupied a different position in hospital administration.

Dr. Cowles also inaugurated the plan of having patients admitted to the Hospital by the executive or his representative, rather than by an outside party employed for the purpose. The advantages of this method will be apparent to everyone upon a moment's reflection. It has worked so well here that no one would ever think of returning to the former custom.

Through his influence and advice and the generosity of the trustees the Medical Library was resuscitated and placed upon its present prosperous foundation, making it a practical up-to-date library, that is of very great benefit to all connected with the professional work of the Hospital.

Under the first superintendent numberless details incident to the erection and organization of a new hospital received careful study and attention from a non-medical standpoint. His successor was equally qualified to carry on the work along those lines, and in addition was enabled through experience gained in the army hospitals and elsewhere to make great advances in all directions. New buildings were erected, the older ones thoroughly renovated, errors of arrangement and construction corrected so far as possible, and the methods of drainage, heating and ventilating were brought up to date. A new and more commodious amphitheatre was built upon the ground floor, thus doing away with the small, inconvenient and out of the way operating room in the cupola. The necessity of having the operating rooms in hospitals removed as far away from patients in the wards as possible no longer exists since the discovery of anæsthetics.

And, finally, it may be said that the interests of the patients, the trustees and the staff all received just and due consideration under the wise administration of Dr. Cowles, our first medical superintendent. The Hospital made great progress in all directions, and has so continued along the same general lines laid down in those early days of 1872. That the trustees made no mistake in putting a physician in charge of the institution at that time is apparent, not only from the high standing and rank of the Hospital, but from the fact that the method adopted by them has become the accepted one in practically all general hospitals in the country. From the experience of the past thirty years it is more than doubtful if lay superintendents ever again will take the position in hospital administration they occupied in the late sixties.

George Howard Malcolm Rowe, M.D., the present efficient superintendent, was born in Lowell, Mass., and received his preparatory education at the public schools and

at Phillips Exeter Academy. He was graduated from Dartmouth College in 1864, and from the Harvard Medical School in 1869. He served as "house pupil" at the Hartford Retreat for the Insane, was associate superintendent at the Massachusetts School for Feeble-Minded Children, assistant physician at the Pennsylvania Hospital for the Insane, under Dr. Thomas H. Kirkbride in Philadelphia, and was assistant superintendent at the Boston Lunatic Hospital in South Boston when elected to the superintendency of the Boston City Hospital in June, 1879.

GEORGE H. M. ROWE, M.D.

Many important changes have taken place in the institution during Dr. Rowe's incumbency of this position extending over a quarter of a century. Two of the most important discoveries ever made in the medical world have taken place within the past twenty-five years. One is the antiseptic treatment of wounds, and the other is the use of antitoxin in the treatment of diphtheria. Both of these methods of treatment have been brought to the highest state of proficiency in this Hospital through the earnest and intelligent

co-operation of the trustees, superintendent and staff. These discoveries, together with the growth of the city and other factors, have all created a demand for many new buildings, and have also necessitated the renovation of the entire Hospital.

Among the more important additions and alterations made during Dr. Rowe's administration may be mentioned the following: The South Department for Contagious Diseases, the Relief Station in Haymarket square, the Convalescent Home in Dorchester, three Homes for Nurses, two large buildings for Out-Patients and several new wards, a Surgical Amphitheatre and a number of smaller operating rooms, Pathological Laboratories, Mortuary and Mortuary Chapel, Power House, Ambulance Station, a four-storied laundry, and enlarged kitchen, etc.

In all the changes and improvements in the institution, of whatever sort, that have been made during this period, Dr. Rowe has been an important factor, and has thus established a reputation as one of the most accomplished executives in hospital construction and administration in the country.

Dr. Rowe is a member of numerous organizations, both professional and social, among which are the following: The Massachusetts Medical Society, the American Health Association, the American Psychological Association, the Boston Society for Medical Improvement, and he is President of the Association of Hospital Superintendents of the United States and Canada.

He has written upon the following subjects: "Observations on Hospital Organization," "The Hospital Unit," "The Public Health: Better Legislation and Enforcement," "A Plea for Trained Nurses for Almshouse Hospitals," etc.

VII.

LIST OF PHYSICIANS AND SURGEONS CONNECTED WITH THE BOSTON CITY HOSPITAL FROM 1864 TO 1904 AND LIST OF PORTRAITS IN MEDICAL LIBRARY.

By George W. Gay, M.D.

John C. Dalton, M.D., Vis. Phys.
John Ware, M.D., Con. Phys.
A. A. Gould, M.D., Con. Phys.
S. D. Townsend, M.D., Con. Surg.
Winslow Lewis, M.D., Con. Surg.
Edward Reynolds, M.D., Con. Phys.
John Jeffries, M.D., Con. Phys.
Silas Durkee, M.D., Con. Surg.
John P. Reynolds, M.D., Vis. Phys.
Fitch Ed. Oliver, M.D., Vis. Phys.
J. N. Borland, M.D., Vis. Phys.
Wm. W. Morland, M.D., Vis. Phys.
J. Baxter Upham, M.D., Con. Phys.
J. G. Blake, M.D., Sen. Phys.
C. H. Stedman, M.D., Vis. Surg.
D. McB. Thaxter, M.D., Vis. Surg.
Algernon Coolidge, M.D., Vis. Surg.
C. E. Buckingham, M.D., Vis. Surg.
Charles D. Homans, M.D., Vis. Surg.
David W. Cheever, M.D., Sen. Surg.
W. W. Williams, M.D., Ophthal. Surg.
H. F. Damon, M.D., O.P.D., Skin.
Charles W. Swan, M.D., Pathologist.
John Homans, M.D., Con. Phys.
W. H. Thorndike, M.D., Vis. Surg.
George Derby, M.D., Vis. Surg.
B. E. Cotting, M.D., Con. Surg.
A. D. Sinclair, M.D., Vis. Phys.
F. C. Ropes, M.D., Vis. Surg.
H. I. Bowditch, M.D., Vis. Phys.
W. C. B. Fifield, M.D., Vis. Surg.
William Ingalls, M.D., Vis. Surg.
S. G. Webber, M.D., Vis. Phys., Nerv. Dep.
Wm. B. Mackie, M.D., Phys., O.P.D.
F. I. Knight, M.D., Phys., O.P.D.
J. Orne Green, M.D., Advis. Surg., Aural Dep.
Hall Curtis, M.D., Vis. Phys.
Wm. Reed, M.D., Vis. Phys.
Geo. H. Lyman, M D., Vis. Phys.
C. E. Stedman, M.D., Vis. Phys.
F. E. Bundy, M.D., Admit. Phys.
A. L. Haskins, M.D., Phys., O.P.D.
Robert T. Edes, M.D., Vis. Phys.
George J. Arnold, M.D., Vis. Phys.
George W. Gay, M.D., Sen. Surg.
Norman P. Quint, M.D., Asst. Surg., O.P.D.
W. E. Boardman, M.D., Phys., O.P.D., Gyn.
J. R. Chadwick, M.D., Phys., O.P.D., Gyn.
G. W. Clement, M.D., Asst. Surg., O.P.D.
W. P. Hammond, M.D., Asst. Surg., O.P.D.
O. W. Doe, M.D., Vis. Phys.
Edward J. Forster, M.D., Vis. Phys.
Thomas Hall, M.D., Phys., O.P.D.
J. A. Fleming, M.D., Asst. Surg., O.P.D.
J. G. Stanton, M.D., Asst. Surg., O.P.D.
Edward Cowles, M.D., Res. Phys. & Supt.
F. W. Draper, M.D., Med. Leg. Path.
O. F. Wadsworth, M.D., Vis. Surg., Ophthal. D.
Wm. P. Bolles, M.D., Vis. Surg.
Thomas Dwight, M.D., Surg., O.P.D.
A. M. Sumner, M.D., Vis. Phys.
A. L. Mason, M.D., Sen. Phys.
E. W. Cushing, M.D., Surg., O.P.D., Throat.
E. Wigglesworth, M.D., Phys. O.P.D., Skin.
E. G. Cutler, M.D.. Pathologist.
G. B. Shattuck, M.D., Vis. Phys.
J. H. Denny, M.D., Vis. Phys.
G. H. M. Rowe, M.D., Res. Phys. & Supt.
Benj. Cushing, M.D., Con. Surg.
E. H. Bradford, M.D., Vis. Surg.
M. H. Richardson, M.D., Surg., O.P.D.
G. H. Tilden, M.D., Phys., O.P.D. Skin.
F. H. Brown, M.D., Surg., O.P.D. Aural.
W. W. Gannett, M.D., Pathologist.
Thomas M. Rotch, M.D., Con. Phys.

Abner Post, M.D , Vis. Surg.
Geo. H. Bixby, M.D., Phys., O.P.D., Gyn.
C. F. Folsom, M.D., Con. Phys.
H. C. Ernest, M.D., Asst. Pathologist.
F. J. Williams, M.D., Phys., O.P.D.
T. A. DeBlois, M.D., Surg., Dis. of Throat.
E. M. Buckingham, M.D., Vis. Phys.
M. F. Gavin, M.D., Vis. Surg.
H. L. Burrell, M.D., Vis. Surg.
F. S. Watson, M. D., Vis. Surg.
C. M. Green, M.D., Sen. Vis. Phys., Gyn.
Morton Prince, M.D., Phys., Dis. Nerv. System.
F. H. Hooper, M.D., Phys., Dis. of Throat.
H. B. Whitney, M.D., Registrar.
Myles Standish, M.D., Asst. Surg, Ophthal.
P. C. Knapp, M.D., Phys., Dis. Nerv. Syst.
G. H. Leland, M.D., Vis. Surg., Aural.
C. F. Withington, M.D., Vis. Phys.
H. W. Cushing, M.D., Vis. Surg.
Francis H. Williams, M.D., Vis. Phys.
Samuel Breck, M.D., Registrar.
W. N. Bullard, M D., Phys., Dis. Nerv. Syst.
H. L. Smith, M.D., Surg., O.P.D.
W. H. Prescott, M.D., Asst. Supt.
E. D. Spear, M.D., Surg., O.P.D., Aural.
H. W. Kilburn, M.D., Asst. Surg., Ophthal.
J. S. Howe, M.D., Phys., Dis. of Skin.
H. F. Sears, M.D., Asst. Pathologist.
E. G. Brackett, M.D., Asst. Phys., Nerv. Dep.
J. A. Jeffries, M.D., Asst. Phys., Nerv. Dep.
George Haven, M.D., Asst. Vis. Phys., Gyn.
W. R. Gilman, M.D., Asst. Res. Phys.
G. H. Monks, M.D., Asst. Vis. Surg.
R. W. Lovett, M D., Surg., O.P.D.
J. W. Farlow, M.D., Surg., Dis. of Throat.
H. D. Arnold, M.D., Asst. Vis. Phys.
W. E. Fay, M.D., Exec. Asst.
V. Y. Bowditch, M.D., Con. Phys.
Henry Jackson, M.D., Vis. Phys.
L. S. Dixon, M.D., Surg., O.P.D., Ophthal.
E. E. Jack, M.D., Surg., Ophthal.
H. W. Kilburn, M.D., Surg., Ophthal.
W. B. Lancaster, M.D., Surg., Ophthal.
F. J. Proctor, M.D., Surg., Ophthal.
F. B. Mallory, M.D., Vis. Pathol.
D. D. Gilbert, M.D., Phys. to Con. Home.
E. T. Twitchell, M.D., Phys. to Con. Home.
E. W. Dwight, M.D., Asst. Vis. Surg.
W. T. Councilman, M.D., Vis. Pathol.
G. G. Sears, M.D., Vis. Phys.
A. S. Knight, M.D., Registrar.
C. M. Whitney, M.D., Registrar.
E. H. Nichols, M.D., Asst. Vis. Surg.
J. C. Munro, M.D., Asst. Vis. Surg.
A. Quackenboss, M.D., Asst. Surg. O P.D., Ophthal.
J. C. Bossidy, M.D., Surg., Ophthal.
E. E. Doble, M.D., Asst. Surg., O.P.D., Aural.
J. J. Thomas, M.D., Asst. Phys., Nerv. Dep.
H. P. Towle, M.D., Asst. Phys., Skin.
Edward Reynolds, M.D., Asst. Vis. Phys., Gyn.
F. A. Higgins, M.D., Asst. Vis. Phys., Gyn.
R. W. Hastings, M.D., Exec. Asst.
W. R. Stokes, M.D., Res. Asst. Pathol.
J. L. Morse, M.D., Asst. Vis. Phys.
Paul Thorndike, M.D., Asst. Vis. Surg.
J. W. Courtney, M.D., Asst. Phys., Nerv. Dep.
J. Selva, M.D., Exec. Asst.
C. E. Edson, M.D., Phys., O.P.D.
J. B. Blake, M.D., Asst. Vis. Surg.
F. B. Lund, M.D., Asst. Surg.
J. H. Wright, M.D., Asst. Pathol.
J. B. Ogden, M.D., Asst. Clin. Path.
C. G. Dewey, M.D., Asst. Supt.
M. P. Smithwick, M.D., Asst. Phys., Nerv. Dep.
Timothy Leary, M.D., Res. Asst. Pathol.
J. H. McCollom, M.D., Phys., Infect. Dis., and Res. Phys., So. Dept.
F. W. Pearl, M.D., Asst. Phys., Infect. Dis.
F. L. Morse, M.D., Asst. Phys., Infect. Dis.
G. F. Harding, M.D., Phys., Skin.
J. L. Ames, M.D., Phys., O.P.D.
Benjamin Tenney, M.D., Phys., O.P.D.
W. J. Daly, M.D., Asst. Surg., Ophthal.
E. M. Holmes, M.D., Surg., Aural.
T. H. Carter, M.D., Exec. Asst.
R. M. Pearce, M.D., Res. Asst. Pathol.
H. A. Lothrop, M.D., Asst. Vis. Surg.
C. F. Moulton, M.D., Asst. Surg., Ophthal.
R. A. Coffin, M.D., Asst. Surg., Throat.
L. W. Strong, M.D., Asst. Phys., Nerv. Dep.
C. B. Dunlap, M.D., Exec. Asst.
C. M. Hibbard, M.D., Asst. Phys., Infect. Dis.
L. L. Gilman, M.D., Asst. Phys., Infect. Dis.
J. W. Bartol, M.D., Asst. Vis. Phys.
J. H. Pratt, M.D., Asst. Pathol.
C. S. Knight, M.D., Exec. Asst.
D. N. Blakely, M.D., Asst. Res. Phys., Infect. Dis.
F. G. Burrows, M.D., Asst. Res. Phys., Infect. Dis.
J. N. Coolidge, M.D., Phys., O.P.D.
J. T. Bottomley, M.D., Asst. Vis. Surg.
H. C. Low, M.D., Asst. Pathol.
E. S. Abbott, M.D., Asst. Supt.
W. E. Currier, M.D., Exec. Asst.

F. R. Cummings, M.D., Exec. Asst.
M. J. Cronin, M.D., Asst. Phys., Infect. Dis.
W. E. Faulkner, M.D., Asst. Vis. Surg.
J. H. Pettee, M.D., Asst. Vis. Phys., Gyn.
E. R. Williams, M.D., Surg., Ophthal.
A. Greenwood, M.D., Surg., Ophthal.
C. D. Underhill, M.D., Asst. Surg., Aural.
H. A. Christian, M.D., Asst. Pathol.
R. C. Larrabee, M.D., Phys., O.P.D.
F. H. Holt, M.D., Asst. Supt.
R. Hazen, M.D., Asst. Phys., Infect. Dis.
E. P. Joslin, M.D., Phys., O.P.D.
W. H. Robey, Jr., M.D., Phys., O.P.D.
F. W. White, M.D., Phys., O.P.D.
F. J. Cotton, M.D., Asst. Vis. Surg.
J. C. Hubbard, M.D., Asst. Vis. Surg.
L. G. Paul, M.D., Asst. Vis. Surg.
F. S. Newell, M.D., Asst. Vis. Phys., Gyn.
L. V. Friedman, M.D., Asst. Vis. Phys., Gyn.
W. R. Brinckerhoff, M.D., Asst. Pathol.
R. L. Emerson, M.D., Asst. Clin. Pathol.
J. A. Mahon, M.D., Phys. to Con. Home.
J. P. Treanor, M.D., Phys. to Con. Home.
H. H. Germain, M.D., Exec. Asst.
W. R. P. Emerson, M.D., Asst. Phys., O.P.D.
E. B. Young, M.D., Asst. Vis. Phys., Gyn.
R. G. Loring, M.D., Asst. Surg., Ophthal.
P. H. Thompson, M.D., Asst. Surg., Ophthal.
M. P. Smithwick, M.D., Asst. Phys., Nerv. Dep.
E. E. Southard, M.D., Asst. Pathol.
R. L. Emerson, M.D., Asst. Clin. Pathol.
W. J. McCausland, M.D., Exec. Asst.
H. H. Smith, M.D., Asst. Phys., Infect. Dis.
T. B. Cooley, M.D., Asst. Phys., Infect. Dis.
R. Collins, M.D., Res. Surg., Relief Station.
T. C. Beebe, M.D., Res. Surg., Relief Station.
E. A. Locke, M.D., Phys., O.P.D.
E. N. Libby, M.D., Phys., O.P.D.
L. R. G. Crandon, M.D., Asst. Vis. Surg.
D. D. Scannell, M.D., Asst. Vis. Surg.
W. C. Howe, M.D., Asst. Vis. Surg.
C. R. C. Borden, M.D., Asst. Surg., Aural.
G. L. Vogel, M.D., Asst. Surg., Throat.
R. L. Thompson, M.D., Asst. Surg., Pathol.
W. G. Dwinell, M.D., Exec. Asst.
S. G. Underhill, M.D., Exec. Asst.
W. W. McKibben, M.D., Asst. Phys., So. Dept.
A. E. Steele, M.D., Asst. Phys., So. Dept.

List of Portraits in Medical Library.

John C. Dalton, M.D., First Senior Visiting Physician, 1863-64.

Charles H. Stedman, M.D., Visiting Surgeon, 1864-66. Presented by his children.

John Homans, M.D., Visiting and Consulting Physician, 1864-68.

Winslow Lewis, M.D., Consulting Physician and Surgeon, 1865-75.

A. A. Gould, M.D., Consulting Physician and Surgeon, 1864-66.

John Jeffries, M.D., Consulting Physician and Surgeon, 1864-76. Presented by his son.

Edward Reynolds, M.D., Consulting Physician and Surgeon, 1864-81.

Benj. E. Cotting, M.D., Consulting Physician and Surgeon, 1868-97.

Henry W. Williams, M.D., Ophthalmic Surgeon, 1864-91. Presented by his children.

John P. Reynolds, M.D., Visiting Physician, 1864-73.

John N. Borland, M.D., Visiting Physician, 1864-78. Presented by Mrs. James Jackson.

William W. Moreland, M.D., Visiting Physician, 1865-68.

Algernon Coolidge, M.D., Visiting Surgeon, 1864-67.

William H. Thorndike, M.D., Visiting Surgeon, 1866-84. Presented by Dr. George W. Gay.

Charles E. Buckingham, M.D., Visiting Surgeon, 1865-76. Presented by his son, Dr. Edward M. Buckingham.

Charles D. Homans, M.D., Visiting Surgeon, 1865-86.

Henry I. Bowditch, M. D., Visiting Physician, 1868-71. Presented by his children.

William C. B. Fifield, M.D., Visiting Surgeon, 1869–96.

J. Baxter Upham, M.D., Visiting and Consulting Physician, 1864-83.

Hall Curtis, M.D., Visiting Physician, 1871–81.

Orlando W. Doe, M.D., Visiting Physician, 1871-90. Presented by Dr. W. H. Baker and fifty other ex-house officers.

Robert T. Edes, M.D., Visiting Physician, 1872–86.

George J. Arnold, M.D., Visiting Physician, 1872–81. Presented by his son, Dr. Horace D. Arnold.

Edward J. Forster, M.D., Visiting Physician, 1876–96. Presented by Mrs Forster.

Allen M. Sumner, M.D., Visiting Physician, 1876–95. Presented by Mrs. Sumner.

Benjamin Cushing, M.D., Consulting Physician and Surgeon, 1879-95.

VIII.

OBITUARY NOTICES OF SURGEONS, HOUSE OFFICERS AND NURSES.

By David W. Cheever, M.D.

Ten of my fellow visiting surgeons have died.

Stedman.	Thorndike.
Buckingham.	Derby.
Ropes.	Fifield.
Homans.	Ingalls.
Thaxter.	Williams.

Dr. Charles H. Stedman, beginning his service at fifty-nine years of age, remained only two years connected with the Hospital. He had had a fairly large experience in surgery in the United States marine hospitals.

His sound advice was tempered by a kindly humor. He was a valued consultant, and fertile in therapeutic expedients. Already debilitated by a failing heart, he died in 1866. Of him it might be justly said that he gave much of the force of his last years to our service.

At about forty-two years of age, and in the prime of years and practice, Dr. Charles E. Buckingham brought to the City Hospital the most original mind of all our colleagues. He always had new ideas; usually practical, sometimes eccentric, frequently brilliant. He was a tireless worker; he never gave up a case; be was full of expedients; his advice was usually wise and judicial. He remained with us four years; then he felt that the stress of private practice and justice to those dependent on him, as well as a reasonable regard for his own health, demanded his retirement.

He was a great physician; he had not the training to make a great surgeon. He excelled in suggestions and diagnosis

more than in operative surgery. His insight was wonderfully keen, and his intuitive appreciation of the patients' real condition was remarkable. It was a privilege to visit with him, and close companionship with him was an education. Honesty, justice, conscience were the moving springs of his life. Abrupt, and often regardless of the *convenances* of polished society, he was rugged, firm and true.

Dr. D. McB. Thaxter, at the age of thirty-six, entered

CHARLES H. STEDMAN, M.D.

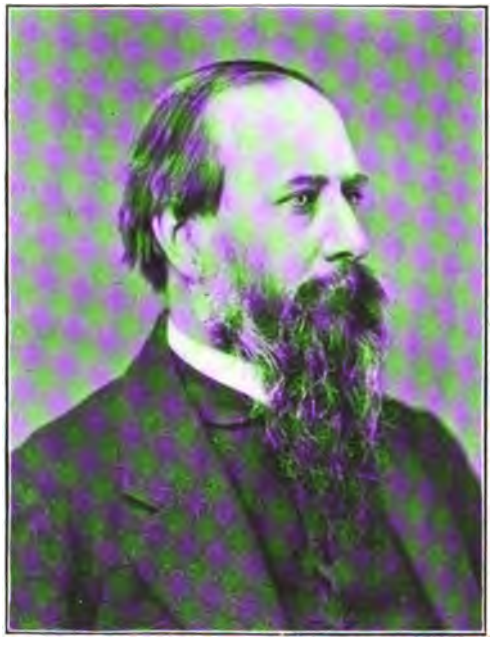
service as a full surgeon, having previously been a general practitioner. He remained eight years, until he died.

A chronic affection rendered him unable to do his service at the Hospital for nearly two years before his death. He was faithful to the Hospital, but perhaps overburdened by too numerous duties.

Dr. Charles D. Homans at thirty-eight years of age brought to the Surgical Staff of the City Hospital a good surgical training and proclivities, and a remarkable common sense. He remained in service twenty-one years. He had

more common sense than many I have met. He did a great deal of surgery in the Hospital. He was always on hand, and very punctilious in his duties. We shall long miss his good advice and counsel.

From 1866 to 1884 the Hospital was well served by Dr. William H. Thorndike, who entered the staff at the age of forty-two. With his early training he combined a practice isolated, and often the scene of emergencies and accidents.



C. E. BUCKINGHAM, M.D.

He became a thoroughly self-reliant surgeon, both from the necessity of his position and from natural force of character. He was, of those who have died, the best surgeon, the most thorough, the boldest and best operator. He did many unusual operations. He was one of the earliest to open a deep appendicular abscess; he tied the iliac; he removed a paving stone from the peritoneal cavity with success; he tied the gluteal in its aneurismal sac. He was cool, well-poised, quiet; a calm worker, and always up to the task before him.

Dr. George Derby ripened late, entering the army when past forty, and thenceforward developing those active professional traits which made him a good military surgeon, and, above all, an authority on hygiene and sanitation. He remained with us only two years.

Dr. Francis C. Ropes, at thirty years of age, and a young man of great promise, entered our staff, but in one year was cut off by death. His brief service was pleasant and useful

D. McB. THAXTER, M.D.

to all. Had he lived, he would have developed into an enterprising surgeon.

Dr. William C. B. Fifield received his appointment at forty-one years of age and served fifteen years. He had taken the degree of the Royal College of Surgeons, and he was trained in the London Hospital. He was an omnivorous reader and student. Possessed of a remarkable memory, his knowledge was too encyclopædic for prompt condensation; for, after all, the surgeon must find within himself those resources which result from well-digested obser-

vation. As a consultant, Dr. Fifield could refer you to endless authorities and cases. A ready and witty talker, he enriched his teaching with apt anecdotes, and he was one of the kindest of men to his patients.

Dr. William Ingalls joined the Surgical Staff at fifty-seven years of age, and served thirteen years. He was then placed on the Consulting Board. Professional spirit was with him a religion. A calm adviser, a gentle friend, pre-

C. D. HOMANS, M.D.

cise, punctilious, careful, he gave a conscientious service to the Hospital.

Born in 1821, Dr. Henry Willard Williams entered late on his medical studies, and was graduated from the Medical School of Harvard University in 1849. Previous to this he had been engaged in literary and commercial pursuits, and was identified with the anti-slavery movement and with their journal, called the "Liberator."

Starting at twenty-nine years of age, he practised for forty-six years. Becoming a specialist on the eye, he first laid the

broad foundation of a general practitioner. He often alluded to the benefits he derived from this course in practising his specialty.

He soon showed the qualities for leadership which marked his whole life. He was one of the founders of the Boylston Medical School. In 1852–54, he gave private clinics on the eye, and treated this branch of medicine and surgery at the Boston Dispensary. In 1863, he was instrumental in

FRANCIS C. ROPES, M.D.

forwarding the establishment of the City Hospital, and was appointed Ophthalmic Surgeon at its opening in 1864. In 1871, he became Professor of Ophthalmology in the Harvard Medical School. In 1885, he became Visiting Ophthalmic Surgeon at the City Hospital. He remained so until his resignation in 1893.

He was many years President of the Hospital Staff. He died in 1895. He was one of the founders of the Massachusetts Medical Benevolent Society, and its President.

Conservative by temperament, he was long identified with the Massachusetts Medical Society; he served two years as its President. The following estimate of his many virtues is taken from the obituary resolutions of the City Hospital staff:

"By the death of Dr. Henry W. Williams the Staff of the Boston City Hospital loses one of its founders, its

WILLIAM INGALLS, M.D.

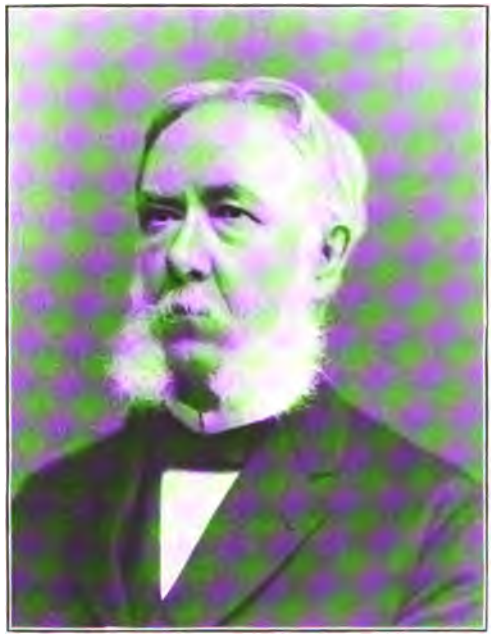
President for many years, and one of its most brilliant members. Patient assiduity in every duty, however laborious, thorough self-reliance, confident boldness, double dexterity as an operator, these were Dr. Williams' characteristics.

"He was the most punctual and the most painstaking of presiding officers, persistent yet prudent, genial and tactful.

"His energy and foresight did much to place this Hospital in its present enviable position. And we shall long miss and regret his counsel and his friendship."

The one guiding impulse of all our deceased colleagues was professional loyalty and harmony as a staff. This was truly remarkable, and I fear may be exceptional.

Hos olim meminisse juvabit.



HENRY W. WILLIAMS, M.D.

Here follow the names of those House Officers, Medical and Surgical, who died on duty in the Hospital:

Dr. Bridgmann		Scarlet fever.
Dr. T. H. Carter	1899	Heart failure.
Dr. J. H. Converse . . .	1905	Cerebro-spinal meningitis.
Dr. Arthur Foster . . .	1873	
Dr. Alfred T. Huntington,	1899	
Dr. John B. Norton . .	1901	Septicæmia.
Dr. W. G. Stebbins . . .	1893	Diphtheria.
Dr. L. W. Tuck	1888	Diphtheria.

Dr. Theron Harlow Carter died October 14, 1899. He died suddenly in bed, while in sleep, it is supposed. January, 1894, to July, 1895, Third Medical House Officer. Execu-

tive Assistant from March, 1896, until his death. He discharged all his duties conscientiously and faithfully.

Dr. Joseph H. Converse, 2d, died January 21, 1905, of cerebro-spinal meningitis. He was a fourth-year student at the Harvard Medical School, and was substituting at the City Hospital. He was a good student and an athlete. He fed a case of spotted fever three days with a nasal tube, and assisted at a lumbar puncture. He perished after a sickness of twenty-four hours.

Dr. Arthur Foster died in 1873. He was a gentleman and a conscientious student. Too much attention to fatiguing duties at night and worry over cases contributed to his death.

Dr. Alfred T. Huntington died in 1899. During the Spanish War the medical services carried double their usual number of patients, and the work, for an efficient and faithful house officer, was doubly hard.

Dr. John Blakely Norton was born in Tinmouth, Vt., February 4, 1868, and died at the Boston City Hospital December 8, 1901.

He fitted for college at the St. Johnsbury (Vt.) Academy, graduating in 1890. In 1893 he entered Dartmouth College and graduated in 1897, and at once began his course in the Dartmouth Medical College, from which institution he graduated in 1900.

For about a year and a half after leaving the medical school he was one of the house staff at the Channing Sanatorium in Brookline, and in October, 1901, he became house officer in the South Department of the Boston City Hospital, where he died two months later of septicæmia (including a pneumonia), which followed a superficial burn of the wrist.

Dr. Norton was a young man of good ability and bright prospects, for he was painstaking and faithful in everything that he did. Moreover, he had an attractive personality and the happy faculty of making warm friends wherever he went.

Dr. Walter G. Stebbins died of diphtheria, October 8, 1893. He was intelligent, faithful, kind, self-controlled. He was competent and always at his post.

Dr. L. Wadsworth Tuck died October 19, 1888, aged twenty-eight years, of diphtheria, contracted in his hospital

duties. He was educated at Amherst and at the Harvard Medical School. He was characterized by high scholarship, good judgment, sympathy, and devotion to all his duties.

In reviewing all these sacrifices of lives to duty, I cannot do better than repeat what I said on the death of Dr. Stebbins. "It seems to us that he died prematurely, and that his death cut short an unfinished life. . . . . What can reconcile us to this half life? Solely, I conceive, the consciousness that we learn all we can; that we do all we can; that we develop ourselves all we can. This is to be mature at any age, and to be old in youth. This our friend did, and to the fullest extent. He improved his opportunities; he worked to the extent of his strength; he lived all he could; he developed all he could; he was complete for his years; he was matured and not young. Whenever such a person dies his life is a success; for him a satisfaction, if for us a regret. A life ended in the service of sick fellow-beings is a noble conclusion. It satisfies both expectation and retrospect."

During these forty years, twenty-four female nurses died on duty:

Miss Theresa M. Bragg died of typhus fever, July 17, 1866.

Miss Lizzie McIntosh entered the school June 18, 1879, and died January 3, 1880, of typhoid fever.

Miss Mary Girdwood entered May 2, 1880; died January 12, 1881. Cause of death not given in record.

Miss Mary Louise Higgs entered October 29, 1883; died March 26, 1884, of diphtheria.

Miss Marion Scott Ellis entered June 13, 1884; died April 8, 1886, of pneumonia, following diphtheria.

Miss Maria Ritchie entered May 29, 1886; died July 29, 1887, of empyema and bronchitis following measles.

Miss Florence Rutherford Dalkin entered November 4, 1886; died December 16, 1886, of capillary bronchitis.

Miss Louise Charlotte Edlund entered May 24, 1887; died February 10, 1888, after three months' illness, beginning with typhoid fever.

Miss Mary Ann Stewart Wier entered June 25, 1889; died December 28, 1889, of diphtheria.

Miss Elizabeth Fearon entered June 12, 1884; graduated July 30, 1886; remained as head nurse till August 9, 1888. Returned to the Hospital as head nurse October 26, 1890, and died of pneumonia on July 14, 1891.

Miss Josephine Martha Locke entered December 27, 1890; died January 8, 1892, of pneumonia.

Miss Ella Frances Cutter entered October 5, 1891, and died of scarlet fever, January 8, 1892.

Miss Louise Parslow entered October 14, 1892, and died March 7, 1893, of scarlet fever and diphtheria.

Miss Kathleen Vancombe Gardner entered August 28, 1892, and died June 5, 1893, of empyema.

Miss Lizzie Marion Carrier entered November 14, 1891, and died October 24, 1893, of typhoid fever.

Miss Harriet Elizabeth Rose entered June 13, 1893, and died January 16, 1894, of diphtheria.

Miss Ruth E. Hutson entered June 10, 1892, and died May 28, 1894, of chronic heart trouble.

Miss Rosa McCormick entered June, 1864, and was on active duty until February, 1892; on duty at the Convalescent Home from February, 1892, to February, 1897; died at the Hospital, July 31, 1897, of bronchitis.

Miss Maggie Maye Fraser entered July 17, 1897, and died December 19, 1897, of septicæmia following tonsilitis.

Miss Edith Elsie Emerson entered August 5, 1896, was graduated September 9, 1898, and remained for the third-year course. Died January 28, 1899, of typhoid fever.

Miss Ida Frances Patterson entered August 24, 1899, and died March 2, 1900, of pneumonia.

Miss Margaret Maude Mowry entered March 25, 1900, and died December 11, 1900, of typhoid fever.

Miss Mildred Keys entered October 22, 1902, and died January 9, 1904, of typhoid fever.

Miss Margaret J. Codman entered March 18, 1904, and died November 28, 1904, of typhoid fever.

It is to be feared that nurses grow careless about contagion, and do not protect themselves, as they should, by baths and disinfection.

IX.

THE MEDICAL DEPARTMENT.

By John G. Blake, M.D., and A. Lawrence Mason, M.D.

The history of the beginning of the Medical Department of the Hospital dates from June, 1864, when the first patient was admitted.

The South (medical) Pavilion consisted of three wards, each containing twenty-eight beds. The North Pavilion, with an equal number of beds, was reserved for the surgical cases. The lower and upper wards were used for males, and the centre wards for females. The basement was used for out-patients on the medical side. The eye patients were also seen here under the care of Dr. Williams. Several of the rooms in the centre administration building were reserved for private patients, both surgical and medical, and were used by Dr. Williams for treatment following operations on the eye. This was all — two pavilions, one medical and one surgical, and the private rooms in the centre administration building, accommodating in all about two hundred cases.

In size, shape and proportion, the large wards of the Hospital have not been surpassed. Wards B, C, F, G compare favorably in size, light, height and graceful proportion with the later additions. We are well aware of the progress made by architects in hospital design. The city was fortunate in its selection, and the members of the staff feel grateful to Mr. Bryant for his skill and success.

The wards were heated and partially ventilated by means of a fan which, when in use, kept up a constant supply of fresh air, hot or cold. This could easily be regulated in each ward. The method continued in use for many years and was reasonably successful. At times during the cold winter months the thermometer dropped perhaps a little low for

sick people, until new boilers were introduced and the fan was used with regularity.

For the first days the number of patients admitted was very few, and the visiting physicians and house officers had but little work to do. Gradually, however, the public became aware that the Hospital was ready to receive cases, and very soon there were no unoccupied beds. The line between acute, chronic and incurable diseases was not very finely

JOHN G. BLAKE, M.D.

drawn in hospital practice in those days. The first few years the public feeling was that the Hospital was to treat sick people regardless of what their disease might be, and at every stage curable and incurable patients were sent there. This view of the uses of a hospital was not new in this community, one institution at least (the Carney) feeling that discrimination among sick people was not in accordance with its idea of genuine charity. The larger number, however, were cases of acute disease, and it has long since become known that the original intent of the Hospital was for this

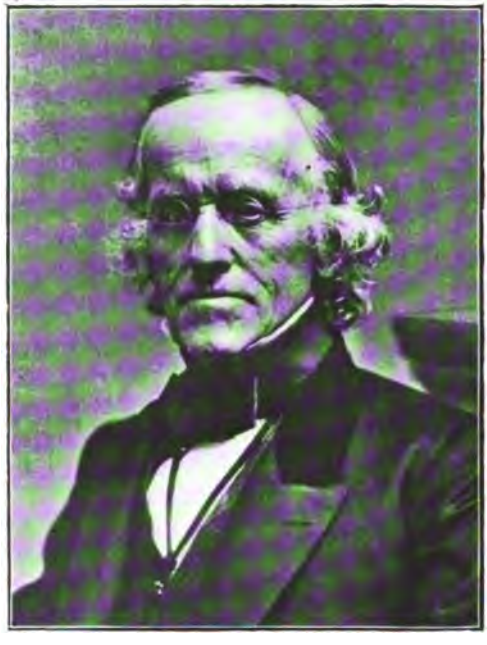
class. The absence of other institutions also compelled the admission, for a limited time, of cases of chronic disease. Outside of the Massachusetts General and the Carney (then only a very small affair containing not more thirty beds) this was the only hospital in Boston. There were several small homes, not exactly hospitals, like the Channing Home for example, where cases of advanced phthisis were received and cared for indefinitely.

A. LAWRENCE MASON, M.D

With a city population of 150,000, the capacity of the Hospital was soon reached. While intended for purely "medical" cases, the medical department received many diseases which would not now be so classed, as, for example, uterine and pelvic disease, and also appendicitis. Traumatic and pathological surgery, with cases for operation, went of course to the surgical side. Membranous croup was a medical disease until tracheotomy was required, and it was then transferred. No division was made of nervous and renal diseases until later.

Surgery has invaded the physician's province greatly during the past forty years, and appendicitis, gastric ulcer, the diseases of the pancreas, have become largely surgical.

The college teaching force then was small, and the subdivisions since introduced did not exist. Many excellent instructors were left out, and could only show their power of teaching to the students who made visits with them. There are no more eager learners than a class of medical students.



JOHN C. DALTON, M.D.

They quickly find the man who has a genius for teaching, and follow him. The large numbers that flocked to the Hospital showed that they found men who interested as well as instructed them. For twenty-five years clinical visits were made by both surgical and medical staffs. Since the reorganization of teaching the general "visits" have been subdivided into small classes and restricted to the men who are teachers in the schools.

The medical staff consisted of Drs. Morland, Oliver, Upham, Borland, Blake and John Homans. Dr. John C.

Dalton, an eminent physician who had spent many years in Lowell and had later come to Boston, had been selected as the Senior Physician. He had expressed himself as desirous of devoting most of his time to the Hospital. By an unfortunate accident he was prevented from taking an active part in the preparations made by the staff, and died before the Hospital opened.

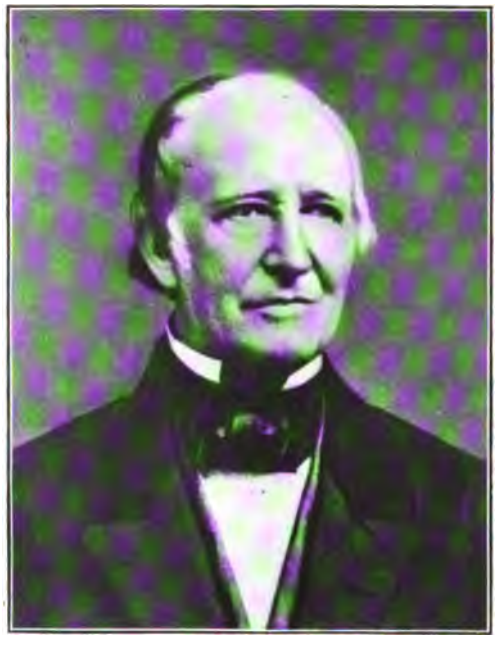
The others were taken from the ranks of the profession in Boston, because of their prominence in practice, or because they were known as writers or as teachers in the medical school. In 1864 the amount of medical writing was comparatively small, and the men who devoted themselves to it soon became well known. As a matter of fact, very little writing was done by the busy practitioners, as an examination of the medical journals will show. They looked after sick people and attended medical meetings, while the men of small practice did the writing. In the course of time this has greatly changed, and the modern idea that the man doing most writing gets the largest practice can be numerically illustrated in our city.

Dr. John Homans was born in Boston in 1793 and graduated from Harvard in 1812. He attended the Harvard Medical School and studied under the direction of Drs. John C. Warren and Gorham. He began the practice of medicine in Brookfield, Mass., which increased rapidly during his residence there. He came to Boston after several years and immediately took a prominent place in the profession. He delivered the annual address before the Massachusetts Medical Society in 1844, and was elected for three successive years as President. He was also President of the Suffolk District Society. As a consultant he was called upon frequently by other members of the profession, in both city and country. A kindly, warm-hearted and sympathetic man, he endeared himself to his patients and was in every sense the perfect family physican and friend. Time increased the love and respect of those who knew him.

He was elected a Visiting Physician of the City Hospital, in 1864, but resigned, after a short service, and was elected

to the Consultation Staff in 1866, and served until his death in 1868, at the age of seventy-four years.

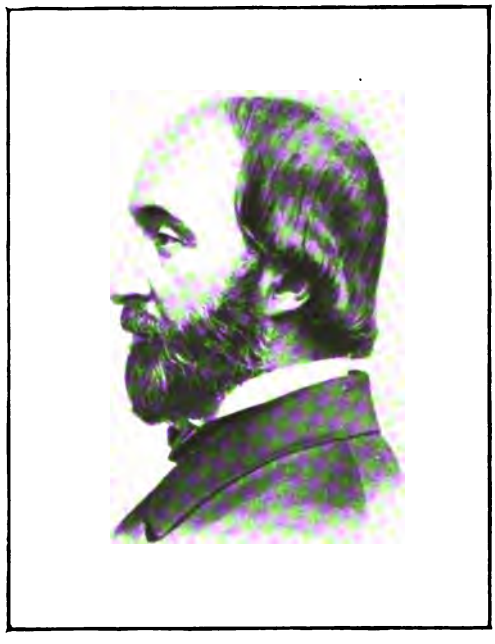
DR. WILLIAM WALLACE MORLAND was born at Salem in 1818. He entered Dartmouth College at the age of sixteen and was graduated in 1838. Three years later he obtained his medical degree at Harvard and went abroad to continue his studies. On his return to Boston he practised with success,



JOHN HOMANS, M.D.

but found time to indulge his taste for scientific study. In 1855, Dr. Morland and Dr. Minot were associated with Dr. J. V. C. Smith, who had long held the position of editor of The Boston Medical and Surgical Journal. Under the competent management of the new editors the Journal rapidly improved, and Dr. Smith resigning two years later, they edited it alone with increasing success till their resignation in 1860. Dr. Morland contributed many articles to its pages and was an excellent reviewer, acute, sound and interesting.

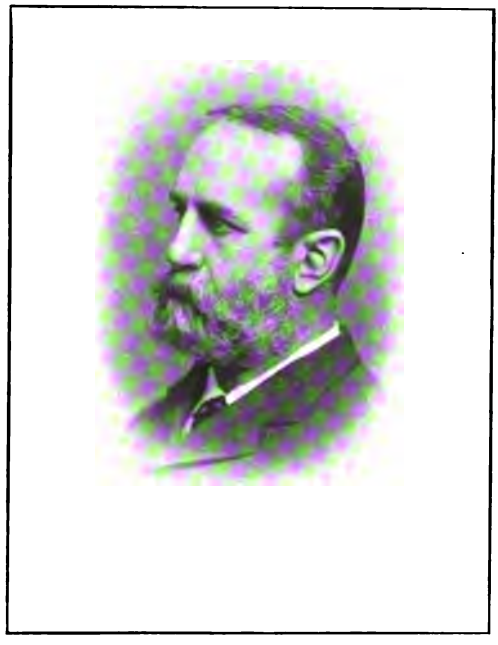
When the City Hospital was opened at the beginning of 1865, Dr. Morland was appointed Visiting Physician, which position he held for some five years. For nearly twenty years he held the important office of medical examiner for the New England Life Insurance Company. He wrote a book on the Diseases of the Urinary Organs, which appeared in 1858 and was very well received. In 1866 he won the Fiske Prize by an essay on Uræmia. His paper on "Florida



WM. W. MORLAND, M.D.

and South Carolina as Health Resorts," which appeared in the Journal in 1872, was the best known of his smaller writings. His excellent advice to "follow the strawberries" will, we believe, save many an invalid from losing the benefit of a winter's exile by a premature return. The terse good sense of the expression is characteristic of its author. As a man and a physician Dr. Morland was alike excellent; of much learning and ability joined to the most charming and unpretentious manner He died November 26, 1876.

Dr. John Nelson Borland was born in Boston in 1828. Was graduated from Yale College in 1847, studying medicine in the Tremont Street Medical School, Dr. Borland received his medical degree from Harvard University in 1850 and became a house officer in the Massachusetts General Hospital. He was appointed one of the first Visiting Physicians of the Boston City Hospital. From 1869 to 1873 he was instructor of



J. N. Borland, M.D.

Clinical Medicine in the Medical School of Harvard University. Dr. Borland was well known and greatly beloved in Boston. His cordiality of manner, his fine presence, his genial disposition made him a favorite wherever and in whatever relation his influence was exerted. He was a skilful practitioner, and his social gifts and gentle sympathy endeared him to his patients whether rich or poor. He was an active member of Boston medical societies and a devoted student of his profession. His memory will nowhere be more affectionately recalled than at Nahant, among whose

residents and summer visitors he practised in the most serviceable and conscientious manner for a long series of years. Dr. Borland retired from practice in 1878, and after that time resided in New London, Conn. He died in 1890, after a long illness, and left behind him the example of an honored physician, an upright gentleman and a loyal friend.

J. B. UPHAM, M.D.

DR. J. BAXTER UPHAM was born in Claremont, N. H., was graduated from Dartmouth in 1842, and at the Harvard Medical School in 1847, practised medicine in Boston until the outbreak of the Civil War, and then joined the army and served through the war as a surgeon under General Burnside. After the war he resumed practice in Boston, and was for several years a Visiting Physician at the Boston City Hospital. He was a most kindly and sympathetic man and loved his hospital work to a high degree. His visits were sunshine to the patients, and this he left behind him in their memories when he departed. He continued on the staff for

many years, and then he moved to New York, where he died on March 17, 1893. He kept up a keen interest in the Hospital until death, and one of his last letters was to the present writer. A finer type of the high bred, courteous, humane gentleman and physician could not be found than Dr. Upham. He contributed many valuable papers on the diseases common to camp life. He was for several years President of the Handel and Haydn Society, and it was through

FITCH ED. OLIVER, M.D.

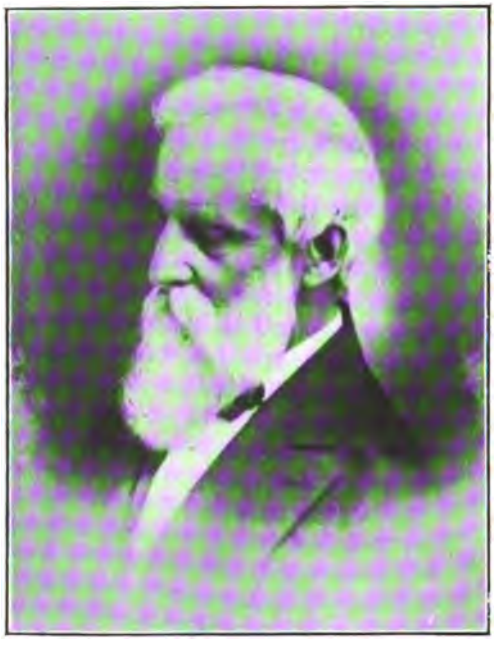
his efforts that the great Music Hall organ, one of the largest and finest in the world, was constructed. To the musical people of Boston Dr. Upham's memory will long remain a delightful one.

DR. FITCH EDWARD OLIVER (born 1819, died 1892) was Visiting Physician to the Hospital for twelve years, from 1863 to 1875, and was subsequently a member of the Consulting Board. He graduated at Dartmouth College in 1839, at the Harvard Medical School in 1843, and then passed

several years in foreign study and travel, chiefly in France and England. Imbued with the best traditions of his profession and with matured experience, he served the hospital in the philanthropic spirit that marked his nature, securing the respect and affection, as well as the entire confidence, of his patients. His scholarly tastes and habits early led to an extensive knowledge of the history and literature of medicine, and in 1848, with Dr. William Wallace Morland, he published a translation of Chomel's "General Pathology." He was well versed in Materia Medica and Therapeutics, and for several years was instructor in these branches at the Harvard Medical School. As a medical writer, Dr. Oliver's contributions often appeared in the publications of the period. They were comprehensive, lucid and instructive. Noteworthy was a report to the State Board of Health in 1872 on "The Use and Abuse of Opium in Massachusetts." He was secretary of the Boston Society for Medical Improvement from 1856 to 1859, and was a councillor of the Massachusetts Medical Society.

Dr. Henry I. Bowditch came to the staff late in life after he had been long in service at the Massachusetts General Hospital and the Medical School. It seemed a relief to him to come in contact with a variety of diseases, and a gratification to see people recover from their acute affections. In the treatment of tuberculosis this was rather the exception than the rule with the methods of those days. A more careful, painstaking, conscientious man never belonged to the staff. His visits usually occupied the entire forenoon, and the Hospital records show the results of patient examinations set forth with minute detail. His paper on "Perinephritic Abscess" is founded on cases seen in the Hospital wards. He remained on the staff several years. In a little sketch like this a passing glance can be taken only at the man, and not at his work. In his life, written by his son, Vincent Yardley Bowditch, the active part taken by him in medical and public work can be seen. The present writer looks back with pride and gratitude to an acquaintance since 1859, and later when he was associated

with him at the Carney Hospital and for many years at the City. There are pleasant memories of a trip taken with him and others to Alexandria and Fairfax Court House in 1862. In politics he was an ardent abolitionist. He remarked to the writer, on the Southern trip mentioned above, that Wendell Phillips was a pro-slavery man in politics compared with himself. Nobody who knew him well questioned his convictions on this subject.

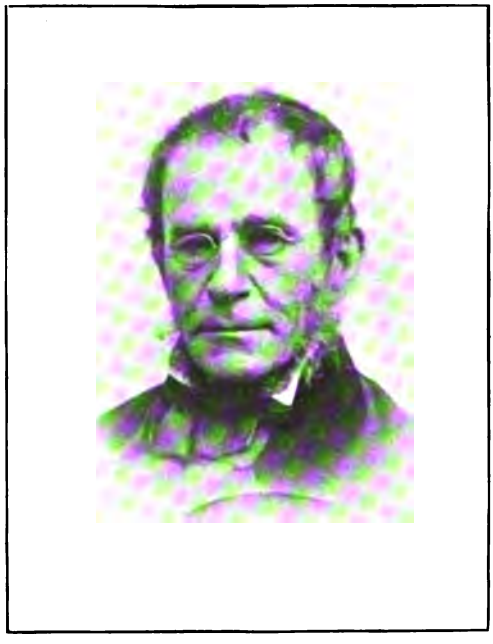


HENRY I. BOWDITCH, M.D.

Dr. John Ware and Dr. Edward Reynolds, both very eminent men, served the Hospital, in its beginning, as Consulting Physicians.

DR. JOHN WARE died at the age of sixty-eight years on April 29, 1864. He was the son of Rev. Henry and Mary (Clarke) Ware, and was born in Hingham, Mass., December 19, 1795. His father was for several years minister in Hingham and was afterwards Hollis Professor of Theology in Cambridge. His mother was daughter of Rev. Jonas

Clarke of Lexington, and granddaughter of Rev. Thomas Hancock, who was grandfather of the celebrated John Hancock. The subject of this notice graduated with high honors at Harvard College in 1813. Immediately after leaving college he began the study of medicine, and received his degree of M.D. in 1816, when he began the practice of his profession in Duxbury, but in 1817 he removed to Boston, where he resided the remainder of his life. He soon



JOHN WARE, M.D.

acquired an extensive practice and attained to the highest rank in professional skill. In 1832 he was appointed Professor of the Theory and Practice of Medicine in the Medical Department of Harvard College, and held the office until 1858. He published various medical lectures and discourses; essays on "Croup," on "Delirium Tremens" and on "Hæmoptysis"; a volume on the "Philosophy of Natural History" and a "Memoir of Henry Ware, Jr." (Boston, 1846). He was for several years President of the Massachusetts Medical Society. He was also a Fellow

of the American Academy of Arts and Sciences. During the year 1828 he was one of the editors of the Boston Medical and Surgical Journal.

DR. EDWARD REYNOLDS, in his day one of the most eminent physicians of Boston, was elected to the staff of the Hospital as Consulting Physician and Surgeon in 1864. He served ten years. When a young man it was not easy to

EDWARD REYNOLDS, M.D.

obtain a complete medical education in this country, and he spent several years in Europe attending the lectures of Abernethy, Astley Cooper, Dupuytren, Bichat and others. In conjunction with Dr. John Jeffries he assisted in instituting the Eye and Ear Hospital and also a private infirmary for the treatment of diseases of the eye in Scollay square. He delivered the lectures on anatomy and surgery in the Harvard Medical School during the absence of Dr. John C. Warren in Europe, and was a teacher of surgery in the Tremont Medical School. A friend of young men, he was always ready to aid and assist by counsel, and was an unusual

favorite with the older members because of his freedom from jealousies, professional or otherwise. A noble presence, strikingly resembling General Scott, a large, generous heart, lovable and companionable, he passed his later years peacefully and happily, dying at the age of eighty-eight.

Thus, of the first staff of physicians, Dr. John G. Blake alone remains, and is now Senior Physician to the Hospital.

Vacancies occurred somewhat rapidly in the medical staff during the earlier years, and the places were filled by other physicians of distinction.

Dr. John Homans having died soon after entering upon active duty, he was succeeded by Dr. John P. Reynolds, who served for many years, but has now retired.

Others were Drs. George H. Lyman, C. Ellery Stedman, Alexander D. Sinclair, William Read, Hall Curtis, Robert T. Edes, George J. Arnold and George H. Bixby, several of whom had been absent when the Hospital was organized, serving at the front in the army and navy during the Civil War.

They entered upon their new duties with enthusiasm, and to this active group of physicians the Hospital is indebted for the maintenance, in its second decade, of the high traditions and sound methods of practice already established, as well as for many contributions to the medical knowledge of that period.

Some of these physicians have passed away, and all have retired from hospital service, as have many of their successors during the third and fourth Hospital decades.

From 1875 to the the present time the following-named physicians have served on the visiting staff:

Frank W. Draper, M.D.,
Orlando W. Doe, M.D.,
Allen M. Sumner, M.D.,
A. Lawrence Mason, M.D.,
George B. Shattuck, M.D.,
Edward J. Forster, M.D.,
Samuel G. Webber, M.D.,
Edward M. Buckingham, M.D.,
Charles F. Withington, M.D.,
Henry Jackson, M.D.,
John L. Morse, M.D.,
Thomas M. Rotch, M.D.,
Charles F. Folsom, M.D.,
James M. Denny, M.D.,
Francis H. Williams, M.D.,
Vincent Y. Bowditch, M.D.,
George G. Sears, M.D.,
John L. Ames, M.D.,
Horace M. Arnold, M.D.,
John W. Bartol, M.D.,
John N. Coolidge, M.D.,

the last four as assistant visiting physicians.

Drs. Folsom, Rotch and Bowditch are now on the Consulting Board.

Growth of the Medical Department.

The growth of the medical department kept pace with that of the city. In 1878 the number of patients had so increased that a third medical service of some fifty beds was set apart, especially for the care of "nervous and renal" affections. At the same time the number of visiting physicians was increased to nine, three being on duty at a time, instead of two as before. After eight years this special service was merged with the general medical services, which are now three in number, with six visiting physicians and four assistant visiting physicians.

Contagious Diseases.

In 1887 two fine new wards were opened for contagious diseases, a very great improvement upon the conditions which had prevailed from the beginning of the Hospital, when many difficulties attended the isolation of such cases. These two wards were of necessity under the charge of the visiting physicians and surgeons, and here, in the diphtheria ward, was the first extensive use in America of the diphtheria antitoxine, which, soon after its discovery, was obtained by our trustees from France and Germany. The value of this agent was at once apparent, and so far has the course of this dreaded disease been modified during the past ten years, in our South Department, that the wards now give little conception of the appalling scenes of former years.

Gynæcological Department.

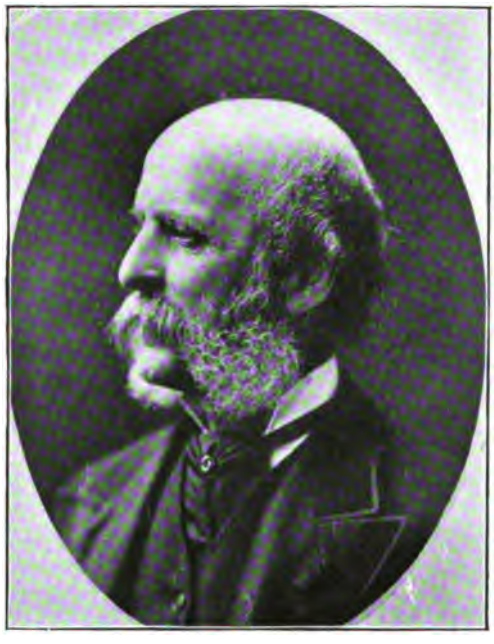
Before 1892 gynæcological patients were received in the Medical Services, but in that year a special department for "Diseases of Women" was organized.

Biographies.

George Hinckley Lyman (born 1819, died 1891) was born at Northampton, Mass., and obtained his early education at the Round Hill School, then a famous institution. After

some years of life in the far West he studied medicine at the University of Pennsylvania, where he took his degree in 1843, and subsequently served as house physician in the Philadelphia Hospital. He then passed two fruitful years in France, England and Ireland, which well qualified him to enter upon his active and useful career.

Dr. Lyman was one of those consulted as to the organization and construction of the City Hospital, and in 1864 he

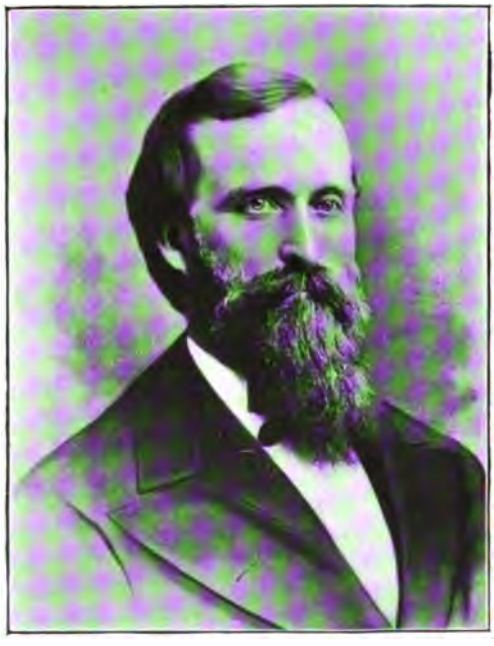


GEORGE H. LYMAN, M.D.

was asked to be a member of the first visiting staff, a position which he then declined, as he was serving in the army of the Civil War. He was, however, appointed Visiting Physician in 1871, and acted in that capacity for twenty years with characteristic devotion and ability. With a fine, positive, but at the same time sympathetic, bearing, his visits to the wards were always cheering and encouraging to his patients. He was skilful and untiring in the investigation of obscure and doubtful cases of disease, and full of therapeutic resource in their relief. Gynæcology claimed his special attention,

and in earlier life he had made two notable contributions to that branch of medical knowledge, viz., a Boylston Prize Essay in 1854, on "Non-malignant Diseases of the Uterus"; and in 1856 an essay on "The History and Statistics of Ovariotomy," etc., to which was awarded the prize of the Massachusetts Medical Society.

This latter essay was in advance of the then prevailing opinion as to the treatment of ovarian tumors.



GEORGE J. ARNOLD, M.D.

At the outbreak of the Civil War, Dr. Lyman, then in his prime, at the age of forty-two, had offered his services to the State. He was soon appointed brigade surgeon in the regular army, and held the first commission of this rank issued by President Lincoln, on the recommendation of the Medical Examining Board, under a new act of Congress (1861). Thereafter he was in active service four and a half years as Surgeon of Division, Medical Director of the Fifth Army Corps, and finally as one of eight Medical Inspectors appointed by the President with the rank of Lieutenant-

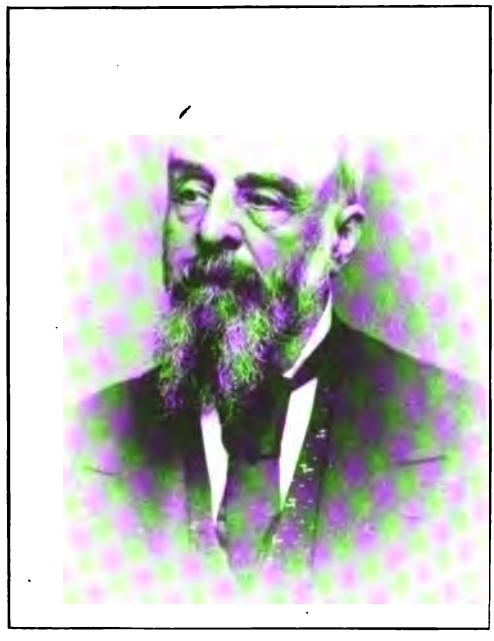
colonel. His experiences are embodied in a paper, read before "The Military Historical Society," entitled "Some Aspects of the Medical Service in the Armies of the United States During the War of the Rebellion," an interesting account of the conditions prevailing in the field and in the army hospitals.

Dr. Lyman was an easy speaker and a graceful writer. As President of the Massachusetts Medical Society (1879), he filled that office with wisdom and dignity. He had a pride in his profession and an enthusiasm, even in his last years, which was an inspiring example, and his deep interest in the City Hospital never failed.

GEORGE JEROME ARNOLD (born 1835, died 1883) was Visiting Physician for ten years, from 1871 to 1881. He graduated from the Harvard Medical School in 1861. After establishing himself in Roxbury, he soon went to the front to join the Union Army as Surgeon of the Twelfth Wisconsin Light Artillery, and did good service with that battery. On his return he established an extensive practice in Roxbury. Dr. Arnold was a man of marked vigor and strength of character, an untiring worker, and to the Hospital he gave his valued labors until failing health obliged him to resign in 1881. He died two years later. He was prominently identified with the Norfolk District, and was for many years a councillor of the Massachusetts Medical Society.

DR. WILLIAM READ, of Boston, died May 6, 1889, aged sixty-nine years. He was born at Amherst, N. H., graduated at Dartmouth College in 1839, and at the Harvard Medical School in 1842. For a few years, immediately after leaving the medical school, he practised at Lynn, after which time he lived and practised his profession in Boston. He was city physician for a term of four or five years, and was twice a member of the School Board. Dr. Read was known widely in Boston as a generous and public-spirited citizen, actively interested in many good objects. He wrote one of the best monographs on placenta prævia ever printed.

Dr. George Holmes Bixby was born in 1837, at Parimaribo, South America, where his father was United States consul. He received his education at Williams College and at the Dartmouth and Harvard Medical Schools. He also studied in Vienna and Paris. He served in various capacities throughout the Civil War. Later he took up gynæcology as a specialty, and was associate founder and editor with Dr. Horatio R. Storer of the "Gynæcological Journal," was a



Wm. Read, M.D.

member of various medical societies and contributed many articles to medical journals. His later years were spent in a condition of invalidism, which prevented the active practice of his profession. He died in Boston, February 28, 1901.

Dr. Orlando Witherspoon Doe (born 1843, died 1890) was attached to the Hospital during his whole professional career, as House Physician 1868–69, Physician to Out-Patients 1870–75, and Visiting Physician from 1875 until his death fifteen years later. He was graduated from Harvard College

in 1865 and from the Medical Department in 1869, later passing a year of study in Europe.

Dr. Doe had a commanding figure and presence, with a calm and dignified bearing. A generous and sympathetic nature, combined with wide experience and mature judgment, won the confidence and regard of his patients to an unusual degree.

O. W. Doe, M.D.

To the house officers of the hospital and to the young physicians of his acquaintance he was always considerate and helpful with advice and assistance. He was especially skilful in gynæcological and in thoracic surgery, in those days when the general practitioner felt called upon to assume the charge of many ailments which now oftener fall into the hands of the specialist. As Clinical Instructor in Gynæcology in the Harvard Medical School, he made valuable use of the Hospital material at his command.

Dr. Doe gave to the Hospital the benefit of his skill and resourcefulness during the years of his greatest activity,

when the exigencies of a large private practice were a tax upon his time and endurance. His premature death at the age of forty-seven was deeply deplored. A rapidly fatal attack of pneumonia was induced by exposure on a stormy winter's night, while caring for his patients in the extensive epidemic of influenza, then a new disease to this generation.

Dr. Doe was a councillor of the Massachusetts Medical

A. M. SUMNER, M.D.

Society and an active member of several other medical societies, to which he made frequent contributions.

DR. ALLEN MELANCTHON SUMNER (born 1844, died 1901) was Visiting Physician to the Hospital for a period of twenty years, from 1879 to 1898. He was a graduate of the Lawrence Scientific School and of the Harvard Medical School (1868). His studies were then pursued for several years in London, Paris and Vienna. Thus he was well equipped for the general practice of medicine and received

his appointment to the Hospital wards at the age of thirty-five, having previously served some years in the out-patient department. His practice was eminently judicious and skilful, and was marked with a high degree of success, though conducted in the most quiet and unassuming manner. His patients held him in the greatest regard. Dr. Sumner was a councillor of the Massachusetts Medical Society and a valued member of other medical bodies. He resigned his position on the Hospital staff three years before his death, which took place on May 25, 1901, in his fifty-eighth year.

Dr. Edward Jacob Forster (born 1846, died 1896) was Visiting Physician to the Hospital from 1884 to 1896, having previously served for several years as Physician to Out-Patients. He was graduated from the Harvard Medical School in 1868, continuing his studies in Paris and in Dublin, where he paid special attention to the practice of obstetrics. On his return to Charlestown, his birthplace, he soon became prominent as a leading physician and citizen, and was identified with that quarter of the city until he was called to Boston during his later years by the wider activities of his professional career.

As a hospital physician Dr. Forster was quick and decided, of sound sense, good judgment and a wide experience of human nature. His early studies had inclined him especially to the practice of obstetrics and gynæcology, and when the department for diseases of women was organized in 1892 he was transferred to that service, where he remained until his death in 1896.

To his professional attainments were added executive abilities of a high order. For many years (1888 to 1895) he was the valued Secretary of the Visiting Staff, a position requiring much patience, time and method in the discharge of its important duties.

When Treasurer of the Massachusetts Medical Society, Dr. Forster took endless pains in compiling the catalogue of members from the date of organization in 1781. He was also Treasurer of the Medical Library Association at the most important period of its development.

The first Board of Registration in Medicine, in 1894, chose him Secretary, and he successfully arranged and carried out the methods of procedure under the new legislative enactment.

Besides these varied labors Dr. Forster was from early life identified with the Massachusetts Volunteers as regimental surgeon. In 1894 he became Medical Director of the First Brigade and in 1895 Surgeon-General of the Commonwealth. In this capacity he went to Philadelphia to attend the meeting of the "Association of Military Surgeons of the United States," of which he was also Vice-President, and on the return journey died suddenly from cerebral hemorrhage, in his fiftieth year. Dr. Forster's industry, energy and progressive ideas while in official life were of recognized value to the State.

DR. HALL CURTIS was appointed on the Medical Staff in 1871, and served ten years as Visiting Physician.

In the second series of the Hospital Reports he published a paper on pleurisy and paracentesis, recording seventeen cases, of which sixteen were cured.

In the third series he published forty cases of diphtheria, with six deaths. This, be it recalled, was before the discovery of antitoxine. His service was every way satisfactory and useful.

Dr. Curtis was born here of an old Boston stock. He received his A.B. from Harvard in 1854, and in medicine three years later. He served as House Officer in the Massachusetts General Hospital. He spent a year in Vienna and Paris. During the Civil War he served as Surgeon of the 24th Massachusetts Regiment. Returning, after faithful service in the field, he practised in Boston and at Beverly Farms. Latterly he became infirm in health and was obliged to give up his profession some five years ago. He died, at the age of 71 years, June 1, 1906.

Dr. Curtis had all the characteristics of inherited honor, honesty and courteous bearing, which have distinguished many of our old families.

He was genial, witty, affable and kind. He must have been an acceptable adviser of the sick. He was faithful to every duty, possessed many friends, and will be missed and regretted by his few surviving contemporaries.

X.

REMINISCENCES OF THE BOSTON CITY HOSPITAL.

By George W. Gay, M.D.

The Boston City Hospital was opened for the reception of patients on Wednesday, June 1, 1864. It was organized with three services, a medical, surgical and ophthalmic. The first two had each six incumbents, the last but one. The staff, as first appointed, was as follows:

Consulting Board.

John Ware, M.D.,	S. D. Townsend, M.D.,
John Jeffries, M.D.,	Winslow Lewis, M.D.,
A. A. Gould, M.D.,	Silas Durkee, M.D.

Dr. Ware died before the Hospital was completed, and Dr. Edward Reynolds was chosen to the vacancy.

The first Board of Visiting Physicians was as follows:

John C. Dalton, M.D.,	William W. Morland, M.D.,
Fitch Edward Oliver, M.D.,	J. Baxter Upham, M.D.,
J. N. Borland, M.D.,	John G. Blake, M.D.

Dr. Dalton died before the Hospital was opened, and Dr. John Homans, Sr., was elected to fill the vacancy. He served one term of four months, resigned, and was elected to the Consulting Board in place of Dr. Gould, deceased. Dr. John P. Reynolds was elected to the vacancy caused by the resignation of Dr. Homans.

The following gentlemen constituted the surgical staff when the Hospital was first opened:

Charles H. Stedman, M.D.,	Charles D. Homans, M.D.,
Charles E. Buckingham, M.D.,	Algernon Coolidge, M.D.,
D. McB. Thaxter, M.D.,	David W. Cheever, M.D.

Dr. H. W. Williams was appointed ophthalmic surgeon, and Dr. Charles W. Swan the pathologist. As the Superin-

tendent was not a physician, Dr. Howard F. Damon was appointed admitting physician with a small salary.

The first vacancy to occur upon the surgical staff was caused by the death of Dr. Stedman. Dr. William H. Thorndike was chosen to the vacancy, and rendered distinguished service for nearly twenty years.

In April, 1864, the following appointments were made by the trustees:

Resident Graduate Physicians.

M. F. Gavin, M.D. D. F. Lincoln, M. D.

Resident Graduate Surgeons.

John Dole, M.D. Clarence J. Blake, M.D.

Soon after the Hospital was opened Dr. E. G. Loring was appointed Ophthalmic Externe. The above gentlemen were recommended for their various positions by the Association of Physicians and Surgeons, Dr. J. N. Borland, Secretary.

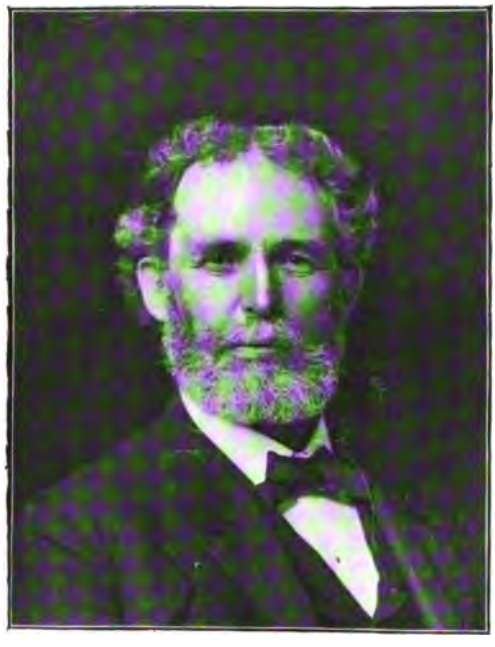
The first class of house officers were graduates, but for several years following they were undergraduates, and not allowed to take their degrees while on service at the Hospital. The first modification of these rules allowed them to graduate toward the close of their term of hospital work. For several years past both graduates and students have been eligible to the positions, which under the circumstances seems the most desirable way.

The house officers in this Hospital have always been chosen by a competitive examination. Simple in the early days, and largely oral in character, but as the numbers and the importance of the positions increased, the methods have necessarily been extended and enlarged, until, instead of occupying a couple of hours, the examinations and the summing up of their results now take portions of several days. In the early days a dozen applicants was a goodly number, but now they sometimes reach fifty or more, *i.e.*, there may be five times as many applicants as there are positions to be filled.

In the early years of the Hospital each new class of house officers was called before the trustees, and the President

addressed them very pleasantly on their privileges and duties to themselves, to their profession and to the patients and the Hospital. It was an admirable custom, and has of late years, after a long lapse, been resuscitated, and is now kept up by a member of the staff to the very great benefit of the Hospital, the patients and the profession.

The writer's first acquaintance with the City Hospital began in the winter of 1864–5, when with thirty or



GEORGE W. GAY, M.D.

forty students he made a visit in the wards with Dr. John Homans, Sr., one of the visiting physicians. The clinic was conducted in the manner in vogue at that time, and would hardly be tolerated at present in any well-conducted hospital. The visiting physician or surgeon was usually given the right of way by courtesy, but with the students it was every one for himself. They crowded about the beds as best they could, that they might see and hear what was said and done. Often the less energetic or the indifferent ones on the outside of the circle,

unable to see or hear much of anything, would stroll about the ward until corralled by the nurse and directed to their proper place. The more earnest students were not long in finding out the most interesting cases, and would take especial pains to get in the front row at those beds and ignore the others. It was "catch as catch can," and affords a marked contrast to the present sensible methods of conducting clinical teaching.

The impressions of that first visit in Ward F have never been forgotten. The Hospital had been open but a few months. The beds were full, everything was new, clean and most inviting. The wards were bright and cheerful, and certainly afforded an ideal refuge for the sick poor.

As it was the writer's first year in the medical school, of course he remembers nothing of the patients or their diseases. Such things were far beyond him at that time, but in those days it was "go as you please" with the medical students. Instead of being graded and directed in a proper manner, as at present, they were simply required to take out two courses of tickets, and attend lectures enough to enable them to pass a superficial examination at the end of a three years' apprenticeship. Hospital attendance was left entirely to the caprice or judgment of the student. It formed no stated part of the curriculum, and yet most students "walked the hospitals," as it afforded a welcome relief to the mental satiety of scores of didactic lectures. Saturday was the most interesting day in the week for the medical students, as they then resorted to that historical amphitheatre in the dome of the Massachusetts General Hospital, the public natal place of anæsthesia, and saw the Nestors of surgery perform their wonderful feats of pre-aseptic times. This was often a preliminary to the matinee, or to the only recreation of the entire week.

In the summer of 1866 we were fortunate in being allowed to serve as the substitute during the month's vacation of the junior house surgeon, Dr. L. F. C. Garvin, recently Governor of Rhode Island. The house officer of those days had a much wider range of duties than has his fellow of to-day. Each service had but one, and he was required to look after the

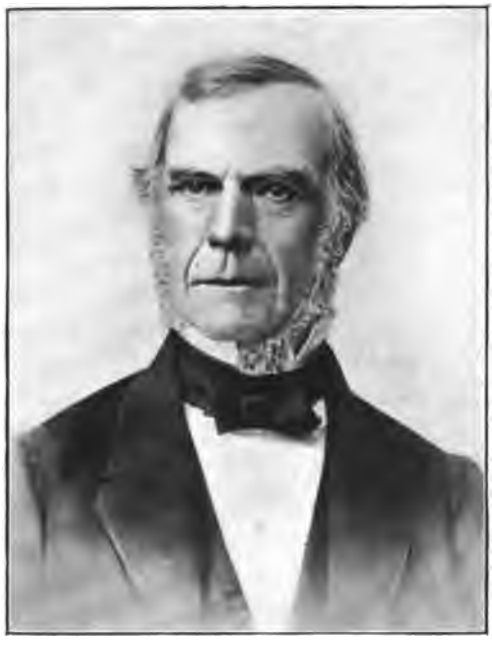
house patients, to attend to the out-patients half of the time, to attend to accidents and emergencies, to do what laboratory work there was to do, to keep the clinical records, to attend, make notes of, and occasionally make autopsies, to assist his colleague in numerous ways, as in minor operations, dressing fractures, etc. The nurses were not trained as they are to-day, and hence were not allowed to use a catheter, dress wounds of any importance, apply splints (of) or fixed bandages, and frequently the house officer presided over the hypodermic syringe. Cupping and leeching were done by him. The clinical thermometer was just coming into use, and a formidable and expensive instrument it was. Ten or twelve inches in length, bent at an angle to allow of its use in the axilla, not self-registering, it required ten or fifteen minutes' exposure to ensure reliable results. As might be supposed, its use was chiefly confined to the medical side of the Hospital.

The hustling house officer who was thoroughly interested in his work generally managed to see his very sickest patients before breakfast, and every few hours through the day. He was supposed to see all of his patients before his surgeon arrived at ten or thereabouts. The visit with him lasted from one to three hours. After dinner, at one o'clock, he was usually kept busy all the afternoon carrying out the directions of his chief — dressing fractures, applying starch, glue or dextrine (glass) bandages (plaster of Paris was little used then), attending to accidents, or autopsies, etc., until it was time to make the evening visit, when all the patients were again seen, diet and liquor lists made out, and so far as possible everything made ready for the night.

The evenings were usually devoted to writing records, doing laboratory work, and the numerous other things for which no time could be found during the day. Those were busy, happy days, full of the keenest interest and the most valuable experience that a student could possibly have. It was no uncommon thing for a house officer to become so engrossed in his work that he would not go outside the Hospital for weeks, a custom, by the way, that is not to be commended. And how tired we used to get! The writer

will never forget a poor fellow in the basement under Ward B, who had a fracture of the pelvis and a rupture of the bladder. We drew his water every two hours, night and day, for two weeks. At that time we slept in C private room, and it seems as if we would get up, go down two flights, draw the water and go back to bed without waking up!

In those days the internes were routed out of bed nearly every night to attend to accidents, see patients in an emer-



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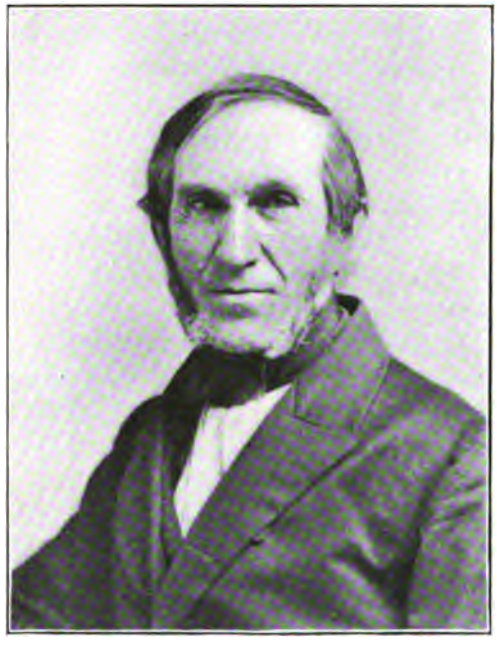
gency, or to give instructions to the night nurse or orderly as to the case in hand. Many operations, as tracheotomy, amputations for compound fractures, etc., were done in the night, and all important ones demanded the services of both internes. Each was first assistant in his own cases, and second assistant in those of his colleague, giving ether, etc. As a rule they worked very harmoniously together to the mutual benefit of all concerned. Each knew the interesting cases of the other service, and owing to the comparatively small

number of inmates in the Hospital, and to the fact that the house officers had a common table at meals, every one could readily keep the run of the entire Hospital, medical as well as surgical. As there was no rotation of services as at present, this was of great advantage by enlarging our experience in different diseases.

Furthermore, the house officers were not so very busy but that they were enabled to spend a little time in the apothe-



A. A. GOULD, M.D.

cary shop, and thus become somewhat familiar with drugs and their preparation. Our sight, taste and smell were educated to know the agents we were using, to know their character and quality to a reasonable degree. The experience thus obtained has served some of us in good stead all our professional lives.

While Friday, the public operating day, was a busy and an interesting one, yet our "Field Day" was Sunday. It was the custom for all the visiting surgeons to meet at the Hospital at ten o'clock on that day and visit every patient

in the surgical wards. Numerous consultations were held, many operations were performed, and all sorts of subjects relating to the Hospital and its work were thoroughly discussed, making the day the most important and interesting one of the entire week. The custom was a most excellent one for all concerned. Interest in the Hospital was stimulated, the *espirit de corps* in the staff was encouraged, and the house officers and the patients received the benefit of the united council of the visiting staff. The Hospital was made a general "clearing house" of all the latest theories as to methods and appliances. Something of value might slip by one or two persons, but it would hardly elude the notice of half a dozen acute practitioners: hence the value of these weekly conferences. The writer can but feel that a revival of a similar custom would conduce to the interest and benefit of all concerned. Let it be understood that upon a certain day of the week every member of the staff, surgical and medical, may expect to find some of his colleagues at the Hospital ready for a consultation, a professional or a social chat, or for whatever may be pertinent to the occasion. It might be advantageous to most of us if a little more time were spent in the wards, as of late years the operating-room has monopolized the attention of the staff and visitors, possibly to our and their detriment. There would seem to be a chance for improvement in our present methods in these matters. It is not too much to expect that the time will come when the pendulum will swing the other way, and perhaps more attention be given to the non-operative methods of treating certain affections than is the custom at present. It is not to be supposed for a moment that the profession will take any backward tracks in the treatment of injuries and diseases. The continual unrest makes for progress, as a rule, and it will never cease until we reach perfection, a state that the most sanguine will hardly admit ever to be possible in our work.

A few words in relation to the changes in the executive department may here be of some interest to the younger generation. For several years the superintendent's office was the small room on the right of the entrance to the central

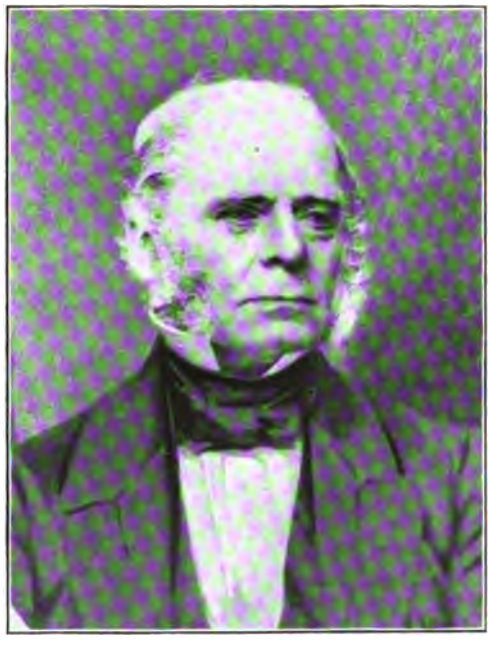
building, "the centre" as it is known to every graduate of the Hospital. The large room on the left of the entrance, now used for executive purposes, was originally the general reception-room. It was also used for the meetings of the trustees and of the staff, and contained the medical and general libraries. The Superintendent's living and sleeping room was the large back one on the right now occupied by the matron, and his private parlor was opposite, and is now the Superintendent's office. The large back room on the left, now the general reception-room was formerly the dining-room for the Superintendent. In those days the house officers and apothecary sat at the Superintendent's table with the family, but this custom was changed in a few years, and the latter occupied a separate table.

Private patients were treated in several of the rooms of the second story of the central building. The apothecary and some of the other officers had rooms on the floor above. The public operating-room was in the cupola. It was to be reached only by several flights of stairs, and on public days (Fridays) the building was a public thoroughfare. Patients were transported by an elevator from the basement to the third floor, then shifted to another elevator and raised to the operating-room. As both of these elevators were operated by hand power, some idea may be formed as to the great amount of work required to get the patients to and from the cupola. The custom of placing the operating-rooms at the greatest distance from the wards was established in the old times for obvious reasons, but with the discovery of anæsthetics the necessity for such separation no longer existed, and they were located near the ground, to the very great convenience of all concerned.

For thirteen years the public operations in this Hospital were done in that out of the way place, that few of the present generation of house officers ever heard of, and probably none ever saw. Now there are nine rooms on the lower floors especially designed for that work, and each one of them is larger and far more commodious than was that old and only amphitheatre of the Hospital in the cupola.

In no other department of the Hospital is the contrast

between the old and the new more pronounced than it is in the facilities for performing surgical operations. These facilities, however, have only kept pace with the demand. In the early days the number of operations amounted to only a few hundred annually, while at present they number nearly or quite as many thousand. The surgeon formerly did all the operations in his service, and had but one house officer. As he frequently had from sixty to eighty or ninety patients



S. D. TOWNSEND, M.D.

to look after, it can readily be understood that the positions were anything but sinecures. At present each senior visiting surgeon has the assistance of two assistant surgeons and four house officers. The character of the work in these days of asepsis will explain the necessity for this large corps of professional attendants. That the character of the work and the favorable results furnish reasons for even more gratification than does the growth of the Hospital in other respects, will appear later in this sketch.

The writer cannot remember the time when more room was not desirable. At times it has been absolutely necessary to put beds in the centre of the wards and even into the corridors. Over-crowding was formerly thought to account for some of the unfavorable results of treatment. It certainly was not conducive to desirable hygienic conditions.

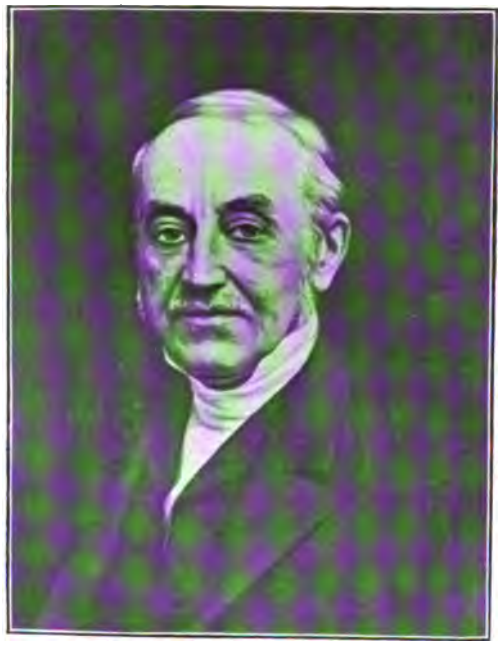
The following extract from the Trustees' Report, dated April 30, 1871, is typical of the state of affairs at this time:

> **As the business of this branch of the Hospital is rapidily increasing, we would respectfully call your attention to our need of more room. We often have from forty to fifty patients daily, and our present quarters are much too limited for their accommodation.**
>
> M. F. GAVIN, M.D.,
> GEO. W. GAY, M.D.,
> *Surgeons to Out-Patients.*

At present the daily average number of surgical out-patients is between two hundred and three hundred, and instead of one man taking care of them, as formerly, with what help he could pick up, there are now three assistant surgeons on duty each day, and twenty-nine dressers, nurses and orderlies.

From the day of its inauguration the City Hospital has been ready and eager to adopt all improved methods of treating disease and injuries. This fact is made evident by the manner in which the most important discovery of modern times, namely, asepsis, was taken up in its various forms and worked out along advanced lines to its present efficient condition. Formerly sepsis, or blood-poisoning, as it is popularly called, was rife in all large hospitals. Practically every wound suppurated, and, whether accidental or made by the surgeon, inflammation and suppuration were always expected to occur as a matter of course. That seemed to be the natural way for wounds to heal. Students were taught to recognize "healthy or laudable pus, and normal suppuration." Thick, creamy, yellowish pus was satisfactory, but none other was. The greater the variation from these characteristics and the worse the odor, the less favorable was thought to be the prospects of repair and recovery.

Immediate healing of large wounds, "union by first intention" as it is called, was so rare an event in those days that it was talked about for weeks, and never forgotten. Convalescence was long, tedious, and beset with all the dangers of the various infections attending prolonged suppuration, as erysipelas, cellulitis, phlebitis, general sepsis and gangrene. The surgeon was in a state of perpetual anxiety as to the



WINSLOW LEWIS, M.D.

results of his operations. The confidence of the present day, born of experience with asepsis, was unknown.

We now know that all wounds heal quicker and more satisfactorily in every way without inflammation and suppuration. That these processes are not only unnecessary in the union of tissues, but are positively harmful, and in some instances dangerous or even fatal; they mean infection. The rule now is for all operation wounds to unite at once, in as many days as it formerly required weeks or even months. Should a wound fail to heal in this manner, the conscientious

surgeon cannot escape the suspicion that his work is faulty, a condition of affairs very different from that of a quarter of a century ago.

Previous to the discovery of asepsis there were no physicians in this vicinity who devoted themselves exclusively to surgery, as the amount of work was not sufficient to justify such a career. The advent of the new system of treatment has broadened the field of surgery to such an extent that special hospitals have been erected all over the civilized world, and many surgeons confine themselves wholly to this department of the profession.

To show the prevalence of sepsis before the days of "Listerism," it may be stated that during the year of the writer's term of service in the Hospital as house surgeon in 1867–68 there were nineteen deaths from pyæmia on the surgical side. At one time sepsis was so common that the surgeons dreaded to use the knife upon any one, fearing an unfavorable result from even so slight an operation as the amputation of a finger or toe. So rare have some of these septic affections become that many physicians of the present generation have never seen a case of pyæmia or hospital gangrene. In former times these diseases were the scourge of military hospitals, and were by no means uncommon in civil institutions. Recent events have proved conclusively that they and many others are preventable, and hence should not be allowed to exist in any hospital.

These facts as regards military hospitals have been illustrated and proven in the Russo-Japanese war in the East, as they have never been before in the history of the world. "The Japanese," Dr. Seaman says, "have learned the lesson which we do not seem to care to learn. We send medical men with our armies to take care of the sick and wounded, while they expect their physicians and surgeons to prevent the soldiers from getting ill. Up to our war with Spain it was generally accepted that as an inevitable result of war five men at least would, as a rule, die from disease to each man killed in battle or dying from wounds. The actual figures of that war, however, show fourteen men dying from disease to one killed or mortally wounded in battle. In startling

[illegible]

[illegible] N [illegible] in [illegible] was [illegible] evidence [illegible] proven [illegible] exist to any [illegible] nations [illegible] the footsteps [illegible] East.

[illegible] U. S. A.

To further illustrate the very great improvements brought about by asepsis, attention may be called to the results of treatment in compound fractures in this Hospital. Formerly nearly one-half of these patients died, and sepsis was responsible for more than 25 per cent. of the fatalities. Moreover, nearly one-half of the patients with this injury were necessarily subjected to amputation to save their life.

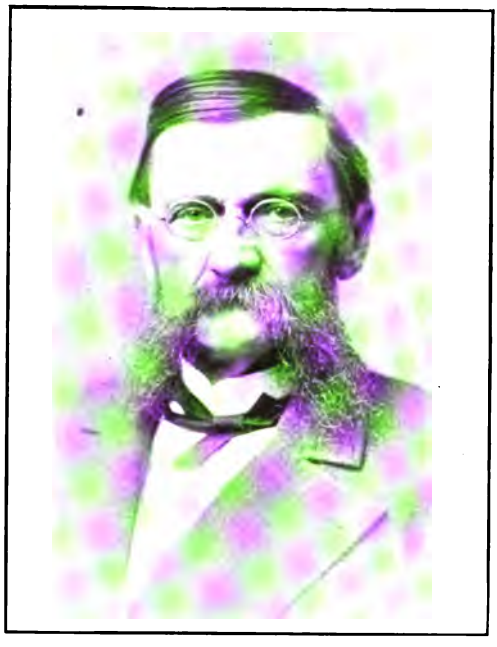
Comparing the results of the treatment of compound fractures in the early seventies with that of to-day, we find that the mortality has been reduced from about 40 per cent. to about 10 per cent. The mortality in these injuries to the femur has been reduced from 80 per cent. to 36 per cent.; of the leg from 36 per cent. to 8 per cent., and of the arm and forearm from 13 per cent. to 8 per cent. Amputation for a compound fracture of a limb is never thought of to-day, unless it be smashed and completely disorganized. As a rule the great majority of uncomplicated compound fractures, as met with now, recover with useful limbs.

Fractures and wounds of all sorts involving the larger joints in the olden time were frequently fatal from sepsis. Injuries that opened the knee joint were peculiarly dangerous, and this cavity was never deliberately opened for any purpose except under dire necessity, because of the danger of almost certain prolonged suppuration and all the complications attending the process. To-day it is a common operation, and properly done the results are usually very satisfactory.

Undoubtedly the greatest advance that has resulted from the introduction of asepsis is seen in the treatment of affections of the abdomen. Previous to the days of "Listerism" this cavity, the largest in the body, was practically forbidden territory to the surgeon. It was treated with the greatest respect by all, and accidental penetrating wounds were expected to prove fatal in a majority of instances from peritonitis. The peritoneal cavity was never opened without fear of the results.

Aseptic methods have changed all that. The larger proportion of the most brilliant and successful surgery of the present day has to do with the affections of the peritoneal cavity. Special hospitals are built for these patients, and

many surgeons confine their work exclusively to this department. Many affections of the abdomen are now readily and safely cured that formerly doomed their victim to a life of invalidism and a premature death. The amount of suffering prevented, the number of lives saved and the increased duration of life resulting from the improved treatment of these diseases alone are beyond comprehension.



BENJ. CUSHING, M.D.

This Hospital was among the first in this vicinity to adopt the antiseptic methods, and did its share in developing and popularizing the various details of the system. And it has undoubtedly been brought to as high a state of perfection here as it has been in any hospital of its size and character in the country.

Our early struggles to attain reasonable antiseptic conditions may well excite a smile in the light of present day achievements The earliest attempt known to the writer was made by Dr. George Derby, who opened an abscess of

the leg with the limb submerged in a tub of carbolic solution. While the result was fairly satisfactory for those times, yet the plan had little to encourage its general adoption.

Numerous trials were made with a great variety of agents in our efforts to attain a satisfactory degree of asepsis. For many years carbolic acid was the favorite antiseptic. Corrosive sublimate, iodoform, comp. tinct. benzoin, peruvian balsam, boracic acid, dry earth and many other things received

GEORGE DERBY, M.D.

attention at different times with varying results. A brief description of the technique of an early Lister operation may be of some historical interest to the younger readers.

The site of the operation and the hands of the surgeon and of his assistants were more or less carefully washed with a two and a half per cent. solution of carbolic acid. The instruments were placed in a five to ten per cent. solution of the same agent. The operation was done under a spray of the same drug, and the denser the cloud of vapor, the safer from infection was the wound supposed to be. The spray was

produced by an atomizer and an air pump. The latter was worked by hand power, and operations lasting any time required a relay of assistants to keep up the spray. Even temporary omission of the spray was supposed to be fatal to asepsis. The vessels were secured with catgut more or less sterilized. Rubber tubing that had been soaked in a strong solution of carbolic acid was used for drainage, and the wound after being douched with carbolic solution was closed with various materials, according to the fancy of the different operators.

The dressing was a marvel of what a dressing should *not* be, as judged by present standards. A piece of oiled silk, called "protective," that had been treated with copal varnish, dextrine, starch and carbolic acid was first applied to the wound to protect it from the irritating gauze dressing. The latter was ordinary cheese cloth impregnated with a mixture of carbolic acid, resin and paraffine in the proportion of one, five and seven parts respectively. The result of this process was a stiff, clumsy, irritating, non-absorbent material that would appall the modern surgeon. Between the two outer layers of this mass of gauze was inserted a sheet of mackintosh or thin sheet rubber for the purpose of diffusing the discharge throughout the dressing, and thus prevent its immediate contact with the outer air. The whole was secured in place with a bandage, as at present. The first dressing was changed when the discharge had soaked through, which, owing to the irritating nature of the applications, was usually within twenty-four or forty-eight hours.

Such in brief was one of the early methods of applying antisepsis, or "Listerism," as it was called for some years. Although it seems crude to this generation of operators, and the results were frequently disappointing, yet they were on the whole much better than had ever been obtained by any other method. Progressive surgeons soon became convinced that the principles underlying their efforts were sound and that it only remained for them to develop and perfect their application. With this end in view surgeons and scientific men the world over engaged in the work with the greatest zeal. Innumerable methods and agents were

studied and tested. A steam atomizer took the place of the hand pump for a time, and then the spray was abandoned altogether, to the great relief of the surgeon and his assistants. The dressings were modified and made more simple, and greater efforts were made to procure asepsis, thereby forestalling the need of antiseptics. Greater attention was paid to the hands of the surgeon and of all those brought in contact with the field of operation. It soon came to be realized that the more attention paid to detail, the more satisfactory were the results. Many of the precautions seemed trivial and unnecessary, even fussy, to the older men, but, nothing daunted, the end justified the means in the opinion of the army of energetic and progressive surgeons. They struggled on through varied experiences, encouraged and greatly assisted by the bacteriologists, until the system was brought to its present wonderfully efficient state of perfection.

It is interesting to note the fact that heat has been found to be the simplest, cheapest and most efficient germicide yet discovered. It can be applied to about everything concerned in an operation except the living tissues. Instruments, clothing, bedding, dressings, sutures and drainage, etc., can be made sterile and free from all noxious germs by boiling, steaming or baking. The skin of the patient and the hands of the surgeon and his assistants are sterilized with soap and water and alcohol, and the hands are also further protected with sterilized rubber gloves.

In place of the Lister dressing described above we now first render the cheesecloth absorbent by removing the oily matter, and then sterilize it by baking or steaming. The result is a white, soft and pliable and thoroughly admirable dressing that has never been surpassed in efficiency.

Previous to the discovery of aseptic methods there was no brain surgery and no abdominal surgery, as we understand them to-day. Since the advent of asepsis the art and science of surgery has been completely revolutionized. Every region of the human body is now accessible to the surgeon and with reasonable safety. Tumors and other abnormal substances can be removed from the brain and spinal cord;

fluids are taken from the chest and even from the sac enclosing the heart. The large vessels can be safely tied. All amputations are done with a confidence in a speedy and sure recovery hitherto unknown. The large joints are freely laid open, and all sorts of deformities, that were formerly considered incurable, are now corrected safely and satisfactorily. The peritoneal cavity is now invaded without hesitation, and every organ in or near it, as the appendix, gall bladder and liver, stomach, intestines, ovaries, uterus and appendages, kidneys and bladder, spleen and pancreas, everything in fact is readily accessible, and, so far as sepsis goes, often amenable to the surgeon's efforts for relief. The principal factor in the success of all these operations is asepsis. Before the advent of that, many of them were never attempted.

Only the older physicians, who knew surgery prior to the days of Lister, can begin to appreciate the tremendous importance of asepsis. In a pretty large proportion of the surgery of the present day its proper application means life and recovery, while its opposite, sepsis, means danger and oftentimes death. In short, it may be said without any exaggeration whatever that aseptic surgery has saved myriads of human lives, and that the amount of mental and physical suffering prevented by it transcends the most vivid imagination.

A large amount of excellent professional work has been done in this Hospital during its first forty years. Among the great number of rare and important operations that have been done here the following seem worthy of mention in this place:

OPERATIONS.

In November, 1866, Dr. David W. Cheever did, so far as reported, the first œsophagotomy in this country.

There are fifteen authentic operations previouly reported: Seven in France, five in England, one each in Belgium, Italy, India.

The operation was done to remove a fish-bone, swallowed three days previously, and imbedded in the upper part of the œsophagus, below the cricoid cartilage. Attempts to remove it through the mouth had failed, and the situation was serious.

An incision parallel to the inner border of the sterno-mastoid from the top of the thyroid cartilage down to the sternum. The carotid sheath was exposed and drawn outward with the sterno-mastoid. The upper belly of the omo-hyoid was drawn outwards. (In subsequent operations it was preferably drawn inwards.)

The edge of the sterno-hyoid muscle, the thyroid gland and the cricoid cartilage next presented themselves. A slow dissection was carried down between the carotid sheath and the œsophagus, which, in the lower part of the incision, lay in contact. The side of the œsophagus was reached, and then the larynx and trachea were lifted and tilted over. The tube of a stomach pump was now introduced into the œsophagus by the mouth. The œsophagus was thus dilated, drawn a little over and to the right, and its coats opened by a vertical incision on its posterior border. We thus avoided the recurrent laryngeal nerve. A rough fragment of fish-bone was extracted. The wound was left entirely open, and fluids regurgitated through the opening freely. Nothing was given by the mouth for twenty-four hours. Then milk and water separately were freely given, and the patient encouraged to sit up. At first, one-half — later, one-third, escaped by the wound. No harm resulted. The fistula closed in three weeks.

A second case closed in four weeks; a third case in nineteen days. The œsophagus was never stitched, and no feeding by tube attempted. Dr. Cheever has performed this operation six times in all.

Dr. Gay has done the operation four times, once for the removal of a fish-bone, once for a plate of false teeth, once for a cent and lastly for a stricture of the gullet. With the exception of the second case, which was septic on admission, all recovered. Dr. Thorndike removed a foreign body by the operation.

Dr. Post did the operation successfully for the removal of a quarter of a dollar. Dr. Bradford removed a plate of false teeth in this way with a favorable result. Dr. Watson removed a fish-bone successfully by the combined operations of œsophagotomy and gastrotmy, *i.e.*, by opening the gullet

in the neck, and the stomach below, which allowed a most thorough exploration of the canal throughout its entire extent. The combined operations are very rarely done, and require great endurance upon the part of the patient, as well as the highest surgical skill in the operator.

In 1867, an osteo-plastic displacement of the upper jaw was done by Dr. David W. Cheever at the City Hospital. He then believed it original. He was mistaken, as Langenbeck and Esmarch had both done similar operations. Dr. Cheever, however, originated, in his own mind, the idea of suturing the jaw.

The operation was for a fibroma attached to the basilar process, and behind the nares and pharynx. The ecraseur, a section of the soft palate, or removal (excision) of the upper jaw were the alternative operations. The following is a description of the operation:

An incision was made from just below the inner canthus of the right eye, downwards by the side of the nose, following the naso-labial fissure, to the corner of the mouth. The inner flap was dissected up until the symphysis was exposed; and the outer, until nearly the whole of the superior maxilla was free.

With a narrow-bladed saw the superior maxilla was now divided transversely, about half an inch below the floor of the orbit. The blade of the saw was plunged into the zygomatic fossa, and the front and back walls of the antrum were sawn through horizontally, starting just below the articulation with the malar bone, and terminating in the anterior nares at the lower end of the nasal bone. The ala of the nose having been lifted up, the right central incisor was next extracted.

Strong bone forceps were now used to divide the alveolar process, through the socket of the right central incisor. The cut included the alveolus only; the hard and soft palate were not touched. The bone was now held by the palate process, the palate bone, and its co-ossification with the pterygoid process. Seizing the alveolar process with strong bone forceps, the whole section of the superior maxilla was bent down and displaced into the mouth.

The body of the tumor was attached to the upper back and right of the pharynx, and to the base of the sphenoid bone. The body was firm, and the base covered a space two inches square.

This was severed by scissors introduced through the opening above the depressed section of the superior maxilla; and the base was cauterized with nitric acid. With the forefinger of the right hand in the mouth and throat, and the forefinger of the left hand in the cavity above the section of the maxilla, they could be made to meet freely and explore thoroughly the pharynx, which was now found clear of obstruction.

The superior maxillary bone was now hanging, with its antrum exposed; and attached by the bent, or broken hard palate, the unbroken soft palate and the untouched mucous surface of the hard palate, and the broken osseous, and unbroken muscular and vascular attachments of the pterygoid process of the sphenoid bone. On these attachments we were to rely for the restoration of the bone. The maxilla was easily pushed into place and held by a silver wire passed round the left central and right second incisor tooth; and by the closing of the lower jaw; the flaps were approximated by six sutures; a firm bandage was applied; union was perfect, and he was able to chew in six weeks.

In 1868, Dr. David W. Cheever removed an encephaloid cancer of the tonsil by external incision, an original operation.

The affected tonsil protruded into the fauces, and doubled in size in three weeks. There was also a lymphatic gland in the neck. The situation and large size of the tumor, as well as its projection outside the throat, contra indicated any operation from inside the mouth.

An incision of three and a half inches was made parallel to the sterno-mastoid muscle, and a second, an inch and a half, along the lower border of the jaw. The enlarged lymphatic was first dissected out. Dissection was now extended and deepened until the tonsil was approached. The digastric, stylo-hyoid and stylo-glossus muscles were divided; the stylo-pharyngeus and glosso-pharyngeal nerve left intact. The fibres of the superior constrictor of the pharynx were

separated on a director, and the pharynx opened. The finger of the operator was now enabled to sweep entirely around the diseased tonsil, the pillars of the soft palate being left intact. The mass was enucleated and removed, and was of the size of a pullet's egg. It proved to be cancer. Twelve ligatures were applied; smaller branches of the facial nerve were divided; and paralysis of one side of the lower lip followed. A single suture in the horizontal incision; the wound otherwise was left wholly open, and the air and fluids passed freely through it.

Liquid nourishment by a stomach tube for one week. At the end of eight days no fluids escaped from the wound in deglutition. In seventeen days solids were swallowed. In thirty-one days the wound was wholly healed. There were no complications.

In this operation regard must be had to the internal carotid artery, the hypo-glossal, gustatory and glosso-pharyngeal nerve; pharyngeal fistula does not result.

Cancer is rare in the tonsil. The microscopic, pathological examination in this case verified the diagnosis. Enucleation with the finger can be accomplished externally with ease, on account of the semi-fibrous capsule described by Chassaignac.

Dr. Watson has removed the tonsil by the above method successfully in one case for malignant disease.

Compound dislocation of the head of the femur, service of Dr. David W. Cheever.

November, 1890, a strong man was knocked down by a case of goods weighing 600 pounds.

In the right groin a small lacerated wound, large enough to allow the protrusion of the head of the femur, which, clean and unbroken, lay upon the pubes, just below the anterior iliac spine.

The limb was shortened, semi-flexed, everted, abducted.

The wound was enlarged; the socket found uninjured; the head of the femur was excised and the shaft dropped back. The limb was brought into position. A counter-opening was made in the outer side of the thigh. Two large drainage tubes were inserted, and an antiseptic dressing applied.

Patient died in two days. The body of the third lumbar vertebra was loosened; the aorta lacerated; post-peritoneal hemorrhage.

The extreme infrequency of the accident has led to there being no precedent rule for treatment. We have found only eight cases. Of these, three were reduced; two excised; one not reduced; one not stated; one died at once. Two recovered, both reduced. Hippocrates advised non-reduction of all compound dislocations. Celsus mentions excision. Agnew, Erichsen, Hamilton, Ashhurst and Stimson would excise; Holmes and Gross reduce. By excising, Dr. Cheever deemed the tension of the parts, the laceration of the fasciæ and capsule thus best relieved; and also drainage secured, this being impossible after reduction.

Among the more important operations performed upon large blood vessels may be mentioned the following:

Dr. H. L. Burrell tied the innominate artery successfully for an aneurism of that vessel in 1895. A year later Dr. Gay did the same operation for that affection, but owing to faulty sterilization of the ligatures the patient lived only six weeks, and died from repeated secondary hemorrhages. He also tied both common carotids successfully for aneurism, the operations being about a year apart. The subclavian artery has been tied a few times, once successfully by the writer for an auxiliary aneurism.

Dr. William H. Thorndike tied the external iliac artery for a stab in the groin with a fatal result. He tied the gluteal artery for a traumatic aneurism successfully. The same surgeon once tied the internal iliac artery successfully for secondary hemorrhage following a punctured wound caused by a fireman's falling from a burning building into an apple tree. A few years later Dr. Thorndike amputated this man's leg for a crush received by his foot being caught between a ferry-boat and the drop. Despite the fact that he afterwards received a fracture of the skull, and had several teeth knocked out, he is alive and well to-day.

At one time Dr. Fifield and the writer practised torsion of arteries in lieu of the ordinary ligatures to control hemorrhage. The femoral, popliteal, brachial and numerous smaller vessels

were successfully closed in this manner. So far as the writer remembers there were no failures, but catgut soon came into vogue, and gave one a feeling of greater security. While torsion has a sound physiological and practical foundation, yet a sterile, absorbable ligature leaves little to be desired for this purpose of safely controlling hemorrhage.

Acupressure with long pins made on purpose to control bleeding from the larger vessels was used by Dr. Cheever

WM. H. THORNDIKE, M.D.

and some of the older surgeons of this Hospital for a short time. The object of the pins was to do away with the long, out-hanging silk ligatures, which were apt to leave a sinus and thus delay the healing of wounds.

Mr. John Wood's operation for the radical cure of hernia was first performed in this city by Dr. Cheever at this Hospital with considerable success. It consisted in invaginating and securing the spermatic fascia in the inguinal canal, and while not quite free from danger, yet a fair proportion of children and young adults were cured by it.

Dr. Gay used the so-called Heaton method several times for the same object. This was done by injecting a strong preparation of white oak bark into the inguinal canal and applying firm pressure with a view to obtaining a permanent adhesion of its walls sufficiently strong to control the rupture. It succeeded in a few children. These and all other methods were supplanted by other and better ones after the advent of

W. C. B. FIFIELD, M.D.

asepsis, and a much larger proportion of these patients are now cured than ever before.

In 1884 Dr. Post treated a case of congenital dislocation of the hip successfully by reduction under ether and securing the limb in the flexed position, as advocated and practised so prominently of late years by Professor Lorenz of Vienna.

The patient was a girl seven years old. The shortened left leg could be readily drawn down to its proper length, but would not remain there. Under ether Dr. Post flexed and slightly abducted the thigh, thereby placing the head of

the femur in its socket, and secured the limb in that position with a plaster of paris spica bandage for about three weeks. The spica was then removed and the limb carefully brought down to a straight position without displacing the head of the bone from its position, and again secured with a plaster of paris bandage, which she wore for six months. The head of the bone was in its proper place, and remained there permanently. The patient walked without a limp, but favored the limb a little in running. The brilliant result, together with the fact that it was the first case treated successfully in this manner, makes it especially interesting and well worthy of a permanent record in this place.

In the early nineties the subject of castration for the relief of an enlarged prostate was receiving a good deal of attention in this Hospital as elsewhere. Dr. M. F. Gavin operated on one of the early cases with a result so brilliant as to be deceptive. Eight hours after the operation the patient was enabled to pass his urine voluntarily for the first time in three weeks. He was enabled to discard the catheter, gained flesh and strength and was to all appearances cured by the operation. The prostate gland had shrunken to one-sixth its former size. Unfortunately, later experience in other cases did not prove to be as satisfactory, and now the method has been superseded by the more successful and satisfactory one of removing the prostate gland itself.

Sulphuric ether has always been the favorite anæsthetic in this Hospital, and during the past forty years it must have been administered fully a hundred thousand times. Its safety s attested by the fact that, so far as known to the writer, there has never been a death here that could justly be ascribed to that agent alone. The element of danger seldom enters into the question of giving ether, any more than in giving opium or any other common drug of like potency. Unlike its rival, chloroform, which is so generally used in other countries, ether is safe and reliable under all ordinary conditions. Chloroform occasionally causes sudden death in a healthy person in whom a most careful examination fails to reveal any other condition sufficient to account for the unfortunate event. Ether never acts in this manner, but,

properly used, is as safe as any agent can be that accomplishes so much.

Notwithstanding the fact that chloroform occasionally proves fatal, perhaps once in two or three thousand cases, yet it occupies an important place in surgery. It has been, and is now used a good deal in operations about the mouth and throat, and in those conditions likely to be complicated with spasm of the glottis, a profuse bronchial secretion, etc. Under these circumstances no unfavorable results have thus far occurred here. For general anæsthetic purposes, however, ether is preferable to chloroform on account of both the patient and the surgeon. It is used with a confidence in its safety, the result of experience, that does not attend the latter agent. The element of safety overshadows all other questions, and renders a final decision.

Of late years the administration of ether has been preceded by the inhalation of nitrous oxide or laughing gas, as being pleasanter to the taste, and perhaps saving of time. Oxygen gas has also been used to some extent for the purpose of hastening recovery from the effects of the ether.

Some years ago rectal etherization was used in operations about the nose and throat by Drs. Post and Gay with indifferent success. As the effects of the drug were less under control, and the irritation of the large bowel at times was pretty severe, the trials were given up. The practice is again receiving attention, with better prospects of success.

Local anæsthesia by means of cocaine was introduced to this Hospital by Dr. Williams very soon after its discovery, and for some time was used almost exclusively in operations about the eye. Of late years it has served a much wider field of work, some capital operations having been done under its influence with satisfaction. Despite the danger of establishing a habit, like opium, it is a most valuable agent for local anæsthesia.

Many years ago, while making a visit in Ward C with Dr. Fifield, the writer noticed that he carried a piece of ordinary rubber tubing, and very naturally wondered what he was going to do with it. Our curiosity was soon gratified by seeing him apply it to a patient's arm to control the circula-

tion. That was the first demonstration of the famous Esmarch tourniquet in this Hospital. From that day to this the method of controlling hemorrhage with a rubber bandage and tubing, as described by the famous Kiel surgeon, has been in constant use here. For many years the application of the common roller bandage previous to securing the Petit tourniquet had been in use at the Massachusetts General Hospital, where it was highly recommended by Dr. Bigelow. The simplicity and efficiency of the Esmarch method at once caused its immediate adoption, and it is now in use the world over.

Occasionally an item appears in the newspapers giving a dramatic account of a physician opening the windpipe, applying his mouth to the wound and sucking out the obstructing material, as in diphtheria, etc. Brilliant and self-sacrificing, but useless and unnecessary. Nothing can be removed from the air passages in this way, as has been demonstrated in this Hospital more than once.

A Chinaman shot himself in the mouth, and was brought here for treatment, and placed in charge of the writer. While removing the bullet from just under the skin on the back of the neck the blood from a wounded vertebral artery ran down the patient's throat into his lungs, and stopped his breathing. The windpipe was immediately opened, a catheter passed into the bronchial tubes, and, instead of trying to suck out the fluid, air was forced into the lungs, thereby driving out the blood, with the result of re-establishing his breathing and saving his life.

Nature clears the bronchial tubes by forcible explosive expirations in the shape of cough, and the surgeon cannot do better than to imitate her methods to the best of his ability, as was done in the above case, and has been done here and elsewere in numerous instances.

Dr. William H. Thorndike removed a stone from the peritoneal cavity, before the days of antiseptics, that measured five inches in length and three in width, and weighed two pounds. The patient, a sailor, forty-one years old, was in the habit of relieving himself of a spasmodic stricture of the urethra by sitting on a belay-

ing pin or an eight-ounce bottle and crowding it into the rectum far enough to accomplish his purpose. Upon this occasion, not having either of these articles at hand, he procured a pebble of the above dimensions, and, in attempting to use it in the ordinary way, it slipped into the rectum, and neither the patient nor several others who made an effort could remove it.

The stone had perforated the bowel about eight inches from the anus, and was removed by abdominal section. The patient was discharged well in a month.

Some very large stones have been removed from the bladder and kidneys in this Hospital. Dr. Gay removed one from the kidney seven inches in circumference, that weighed five ounces. The patient lived several years afterwards.

Dr. Post took one from a man's bladder that weighed twenty and three-fifths ounces, or more than a pound and a quarter. The patient was sixty-six years of age, and had had symptoms of trouble in the bladder for fourteen years.

Dr. Burrell crushed a calculus weighing seven ounces, probably the largest one ever removed in this manner. Time of operation, five and a quarter hours. Result, a speedy and perfect recovery.

Dr. Burrell has also done some noteworthy work in connection with Anthrax, Traumatic Apnoea, Recurrent Dislocation of the Shoulder, and Immediate Rectification of Fracture of the Spine.

Brain surgery has received due attention in this institution. One of the earliest cases of removal of a tumor from the brain was under the care of Dr. Bradford. The location of the tumor was exactly determined by Dr. Knapp, and the operation by Dr. Bradford proved the correctness of the diagnosis as well as the position of the growth as indicated by Dr. Knapp.

Some valuable surgical appliances have been devised by members of the staff of this Hospital that are worthy of notice in this place.

The most ingenious and serviceable fracture-box known to the writer was devised and made by Dr. Bolles several years ago, and has been in use here ever since. It is adjustable to

any leg and to any position, and allows ready access to any part of the limb. Dr. Bolles has also devised and constructed an invalid table, a portable steam and hot water sterilizer, an irrigating flask, a jointed ham splint, some forearm splints, as well as some ingenious finger splints, all of which show great ingenuity and a keen appreciation of the facilities necessary for surgical work.[1]

Dr. H. W. Cushing has devised a most ingenious and serviceable "right angle continuous intestinal suture," which is extensively used in that sort of operations.

Dr. George H. Monks' needle holder is one of the very best of the great numbers that have been offered to the profession.

Dr. E. H. Nichols' extractor for the removal of the O'Dwyer tube from the trachea is a great improvement on the one originally presented for that purpose.

The ether inhaler invented by Dr. John Bapst Blake is the best one ever brought to the notice of the surgeons in this vicinity, and it is used extensively not only in hospitals, but in private practice as well. It is simple, cheap, easily taken care of, and saves from 30 to 50 per cent. of ether.

Dr. F. S. Watson has done several original and unusual operations, among which may be mentioned the following:

Forming an anastomosis between the upper and lower parts of an hour-glass stomach, the first case of the kind done in this country, successful. Original methods of suturing the fractured patella, and of movable kidney. The first successful case in Boston of suture of an intestinal typhoid perforation. Gastro-enterostomy for the relief of Gastric Tetany, one of the very few operations done in this country, successful. (1902.) Extensive resection of the liver for cancer, with recovery; first case done here. First cases of Prostatectomies done in Boston. Suture of intraperitoneal rupture of the bladder in two cases, one successful. Extensive resections of the bowel, etc.

Dr. H. L. Smith has done original and valuable work in connection with fractures of the elbow, which tend to prove

[1] A full description and illustration of these appliances may be found in the Medical and Surgical Reports, Series 3 and 8.

pretty conclusively that most of these injuries are better treated by flexing the forearm to an acute angle with the humerus, rather than to a right angle, as was formerly taught and practised.

Dr. Howard A. Lathrop has done some excellent work in relation to the Ethmoidal bones, and published it under the title of "The Anatomy of the Inferior Ethmoidal Turbinate Bones with Especial Reference to Cell Formation: The Surgical Importance of such Cells."

As regards the recent or present-day surgery of the brain, stomach, intestines, pancreas, prostate, appendix, etc., the surgeons upon the staff of this Hospital are abreast of the times, and are doing excellent work. The time was, within the remembrance of the older members of the profession, when American surgery and American methods attracted little attention, outside their own immediate vicinity, while any theory or mode of treatment from across the Atlantic, even if coming from one of whom we had never heard, and whose place of residence was not to be found upon the map, was eagerly accepted and adopted. Fortunately, this custom no longer prevails. American surgery has won an honorable position in the world. It is now pretty generally acknowledged that nowhere do the sick and injured receive better care and treatment than they do in this country, and nowhere are the rights of the individual more generally respected. Our hospitals rank among the best, and are a source of surprise, as well as of admiration, to our professional brethren from over the sea.

In the marvellous progress in hospital construction and administration, as well as in improved methods of combating disease, made during the past third of a century, this Hospital has taken a leading position. Her graduate physicians and nurses are scattered all over the country, and are a credit to their *alma mater*. Their loyalty is attested by the two alumni associations, one of the physicians and another of the graduate nurses, both of which associations are active and energetic in the right directions.

Forty years' intimate acquaintance with the growth, methods and work of this Hospital has given the writer the

highest admiration for the liberal policy and wise administration of its trustees, backed up as they have been by the generous appropriations of the city government, for the enterprise and superior executive ability of its superintendents, for the skilful and faithful services of its staff of physicians and surgeons, and for its zealous and devoted staff of nurses.

The character of the work done here, in all the departments, has kept pace with its increase in magnitude and importance. The sick and injured have been well cared for. The city's money has been wisely and economically expended, and the citizens of Boston have every reason to be not only satisfied with, but proud of, this great charity, which occupies a foremost rank among the institutions of a like character in the civilized world.

XI.

PROFESSIONAL REMINISCENCES ON SEPSIS AND GANGRENE.

By David W. Cheever, M.D.

In June, 1864, after some delays, the Boston City Hospital was opened. Preparation had been made for surgical wards as well as for medical ones, for an operating theatre, a supply of instruments and general surgical appliances. The earlier surgery was largely accidental, such as fractures, compound fractures, crushes, cuts, amputations. Pathological surgery sought older hospitals. Of the six visiting surgeons first appointed, only one, besides the writer, served any considerable length of time. Indeed, up to 1869, five years after its opening, the Hospital had had one surgeon who served one year, two who served two years, one who served three years, and one four years.

Five-sixths of its surgical staff was gone in five years. This want of continuity of service was a great injury to the character of the surgical work. In addition to this evil, it is to be noted that most of its earlier surgical staff were physicians and surgeons, general practitioners of middle age and in full practice; and however much natural aptitude, good diagnostic powers, and unswerving devotion to work might aid them, still these gentlemen lacked long surgical training and were harassed by a large family practice.

It is, then, very creditable to them that they struggled bravely to fight pyæmia and sepsis; and amid the terrible discouragement of those surgical days, so full of mortality, they never wavered in their daily visits and their honest efforts. Fractures of the skull, compound fractures of the limbs, resulted in a like percentage of fatalities, whether treated without or with trephining and amputation. Ampu-

VISITING SURGEONS, 1882.

W. C. B. Fifield, M.D. David W. Cheever, M.D. George W. Gay, M.D
William Ingalls, M.D. C. D. Homans, M.D. Wm. H. Thorndike, M.D.

tations, when primary, gave often a mortality of 50 per cent. In abdominal operations, except hernia, more died than recovered; of pathological tracheotomy, from 66 to 75 per cent. perished.

These are terrible figures; they are comparable only to war. And yet they were not exceptional, nor confined to any one hospital, thirty years ago. Suppuration was the rule; absorption the risk; gangrene the occasional consequence of an injury. The pure air, the pure water, the pure soil of Hippocrates were remembered, and sought for, and fought for in hospital construction and administration. But the non-recognition of the invisible algæ and spores, which poison wounds by fermentation and multiplication in the blood, made all the difference between life and death. It is surprising how near to, and yet how far from, asepsis the surgeons of those days came. In the first professional report of the surgery of the Hospital, in 1869, we read, under "Compound Fractures": "Different forms of disinfectant dressing, particularly a thorough syringing of cavities and sinuses with a solution of permanganate of potash, half a grain to the ounce; or carbolic acid as a dressing, of a strength ranging from a drachm to a pint, up to equal parts with glycerine, were used with benefit. We do not think it yet time to decide on the asserted overwhelming merits of carbolic acid. While it was largely used, the Hospital was quite free from erysipelas and pyæmia for many months, but cases finally broke out while it was still employed. Again, longer periods of entire exemption from infectious diseases have occurred since, while other dressings were used."

It is a familiar memory to me, also, that each patient was obliged to have his own sponge.

Débridement of ragged wounds in fasciæ, removing torn tissue, smoothing off sharp angles of bone, were all practised, and an attempt was made to seal the compound fracture in its blood. The pus cell was deterred by permanganate, the staphylococcus discouraged by carbolic; yet for want of preliminary shaving, scrubbing, corrosive, etc., to both limb, wound, instruments, and hands, and for want of sterile dress-

ings, these excellent measures did not go far enough for asepsis. Pus formed and burrowed; sloughing and necrosis followed. This table gives the results:

Compound fractures, lower extremity, for five years:

Recovered, 32; died, 49.

Ratio of mortality, 60 per cent.; expectant treatment, mortality, 68 per cent.

Ratio of amputation, 58 per cent.; mortality after amputation, nearly 50 per cent. (47 amputated, 22 died).

Again, take trephining of twelve fractures of the vault; not trephined, mortality, 59½ per cent.

Of ten fractures of the vault, trephined, mortality 60 per cent.

Of six fractures of the vault, elevated or sawed, mortality 66 per cent.

Hospital gangrene, the scourge of the army and sometimes of general hospitals, broke out for the first and only time in the Boston City Hospital on November 24, 1875; by December 30 it was conquered, and although a sporadic case appeared January 7, that soon subsided, and there were no more. There were eleven cases: Ward D (an attic) furnished six cases; Ward B (first story) five cases; Ward C (female, second story), the story between B and D, escaped. By vacating B and D, cleaning, whitening, improving the drainage and letting in more air, all trouble disappeared.

After the Civil War various diseases, as chronic diarrhœa, typho-malarial fevers, general malaria, old suppurating wounds connected with bone, some erysipelas and much debility and poor blood were brought to our Hospital by occasional applicants from the returning army.

This influence lasted for years. We do not mention this as an explanation of the gangrene, for bad air and infected wards, after ten years' occupancy, no doubt existed, and were breeding ground for any diseased condition. At this time the so-called contagious or isolating ward was much improved. The season forbade open-air treatment, but when summer came tents were used for three to four months for bad cases.

Surely the surgeons then toiling against this malign influence deserve credit for stamping it out in five or six

weeks; and the Hospital administration may be justly proud of its freedom from gangrene, as an epidemic, or condition of the wards, ever after. At that time all operations were abandoned; cases were isolated; bromine, first used in the army, was freely employed; also stimulants, tonics and opium. Cleanliness, together with the vacating of the infected wards, soon cured the evil.

It may surprise the reader of to-day to see what cases were attacked:

(1.) A compound fracture.
(2.) An excoriation.
(3.) An old stump.
(4.) An acute abscess, incised.
(5.) An old sinus.
(6.) A simple fracture treated with leeches.
(7.) A bubo.
(8.) A simple fracture and contusion.
(9.) An incised wound.
(10–11.) Two fractures made compound by delirium tremens, and followed by amputation, gangrene and death.

Eleven cases, six deaths.

In Ward B I had long had an aversion to one bed in the right hand corner on entering. I thought cases did badly there. It was found that a leaking drain communicated with the air in this corner by an air-shaft. This cause removed, its baneful effects vanished.

The first amputation of the thigh done in the Hospital united by first intention. No wound so large healed primarily, that I remember, until antisepsis was established.

Yet we had many good results, and a general mortality of from seven to nine per cent. only. Of thirty operations for the radical cure of hernia, where suppuration was the rule and was expected, all recovered but one.

In those days pyæmia was the opprobrium of surgery and the dread of the surgeon. Erysipelas was common. Tetanus not more frequent than now, but when acute was fatal. Diphtheria was moderate in amount, but quite large in mortality. Alcoholism seemed to me more frequent than to-day. Syphilis and tuberculosis also seemed, if possible, more rife.

The clinical thermometer was just being introduced; and the microscope was rather an anatomical toy than a surgical adjuvant.

The surgeon of that day fought a battle with disease, which kept him constantly at bay against insidious, little understood and often invincible foes.

Contrast this with the ease of surgery now, and we can readily see why it is so much more attractive; why the number of operations and the corps of surgeons in the community are so largely increased.

These are happy days for the surgeon. Although misfortunes happen, they are rare; and the operator expects a good result as the rule, a bad one as the exception.

It is a cause of satisfaction, if not of pride, that our Hospital is fully abreast of others in the improvements, the sanitation, the asepsis of this golden age of surgery. Let us remember with gratitude our predecessors, who gave their life's energy to found and build up the City Hospital.

XII.

TEACHING AND APPOINTMENTS.

By David W. Cheever, M.D.

Teaching was begun the first autumn, in four months after opening, by Drs. Buckingham, H. W. Williams, Borland, and Cheever.

Three of the above later became Professors in the Harvard Medical School; and the fourth became an Instructor.

Afternoon clinics; morning visits, and public operating day.

A small class of students was laboriously taught, by busy men, who, at personal sacrifice, determined to use all their efforts to build up a clinic. At that time clinical instruction was at a low ebb. Walking the wards meant very little teaching. Operations had been up to this date public, but hardly clinical, as little comment was made on the cases, and no discussion encouraged. Dr. Cheever gave the first formal set of clinical lectures, over patients, reported for publication. It was an uphill struggle to popularize clinical teaching. Students were raw; material plenty; teachers untrained. Didactic instruction was prominent; almost exclusive. That humanity and prudence were always kept foremost is shown by this rule of the Trustees: "Members of the Medical and Surgical Visiting Staff may give instruction and perform operations in the amphitheatre on appointed days; and, subject to the regulations of the Trustees, may introduce patients, provided that in every case the attending physician or surgeon shall certify in writing that the patient can undergo examination and treatment without detriment; and that the superintendent and the patient consent thereto."

Teaching never ceased, and has been amplified from decade to decade. How it was in 1900 is thus described by Drs. Burrell and J. B. Blake:

"It is interesting to note the increase in surgical instruction given at the Boston City Hospital during the last ten or fifteen years. In 1887 there was one surgical clinic and one surgical visit a week. On Fridays public operations were done by the surgeons in the amphitheatre. The surgical

DAVID W. CHEEVER, M.D.

clinic was given by the Professor of Surgery of Harvard University; large sections of the class attended the visit, and cases were shown by the surgeons. For the fourth-year class, which had recently been started, surgical visits were made on Mondays and Thursdays.

"The clinic given by Dr. Cheever was fully attended and greatly appreciated. The clear, brief descriptions of clinical cases, the far-seeing prognoses, and the direct, skilful operating, made the Tuesday clinic one of the favorite exercises of the Harvard Medical School.

"The ward visits gradually became less popular. The advent of plaster, and of antiseptic or aseptic dressings, presented a ward of hidden fractures and operative wounds. These facts, combined with the necessity of peering over the shoulders of a fellow pupil at a patient lying in a bed beneath a white coverlet, suggested that the method did not constitute satisfactory instruction in surgery. Walking the wards of the Hospital, deemed so important by our predecessors, became less and less valuable, and finally the attendance became irregular and meagre.

"The amount of knowledge obtained was small, and it was only with the personality of the instructor that the student was brought in contact. This condition gave rise to sectional teaching in the out-patient department, and small divisions of the class — ten to twenty — attended the out-patient clinics from time to time. These small sections and the personal contact with the patients have been developed, and at present constitute one of the most valuable forms of instruction. It will never supersede clinical lectures, because it is impracticable for men of mature experience to devote their entire time to small sections of men, and this work must, of necessity, be done by young instructors.

"(*a.*) *Operations.*— Many improvements have taken place in operations as viewed from a teaching standpoint. Operations are done in the amphitheatre, and charts are hung up, giving the clinical history of the case that is to be operated, with the differential diagnosis established. The results of operations are shown to the students, and frequently the end result is shown them in the amphitheatre. Not infrequently the more advanced students examine the case to be operated on, and make their own diagnosis and prognosis, and give advice in regard to treatment.

"(*b.*) *Clinics.* — Perhaps no more important advance has been made in the management of surgical clinics than in the grouping of clinical cases. As the Hospital has increased in size, and the wealth of material has been recognized, a careful system of recording interesting cases of a common disease or injury has enabled the teacher to give a lecture on fractures of the leg, for example — showing first a recent fracture of

both bones of the leg, of the fibula, a Pott's fracture, a compound fracture; then a series of cases illustrating fracture of the leg at the end of ten days, at the end of three weeks, six months, and finally one and one-half or two years. In this way a picture of the progress of the disease or injury, which is of great value, is presented to the student's mind.

"Experience has taught that the extraordinary and unique cases, which are, of course, to the student's mind extremely interesting, are not as desirable clinical material as the common diseases and injuries. The former, as they present themselves in a great hospital, should be shown to students, but never at the expense of omitting the latter.

"The sequence of presentation of material has been carefully studied, and attention has been paid to bringing to the student's mind the natural order of injury and disease. This naturally is only possible where a great amount of clinical material exists.

"On one occasion, in the course of a year, twenty-eight cases of tracheotomy and intubation were shown to the students, and another time thirty-two cases of appendicitis, which were recent, had been operated upon, or had not been operated upon, were shown to the students, and some of the cases were examined by them.

"On another occasion fifteen fractures of the skull of various types and conditions, from a simple linear fracture to a compound depressed fracture, were shown to the students. All such things are possible with a large amount of clinical material carefully watched, analyzed, and tabulated.

"*Pathological Material.* — The impetus that has been given to medicine and surgery at the Hospital by the establishment of the pathological laboratory cannot be exaggerated. In the surgical clinics the students are constantly taught to explain clinical phenomena by pathological conditions, and fresh pathological material is shown whenever possible.

"The results of the examination of morbid specimens and of cultures are reported, and the student attending the clinics consecutively is kept informed of the progress of the cases. When occasion arises the student goes to the autopsy.

"Another important step has been made in the use of clinical material to illustrate correlative didactic lectures. For example, a lecture is given at the Medical School on appendicitis, on Monday; on Tuesday the students are shown five to fifteen cases, illustrating the various stages of the disease; on Wednesday another didactic lecture is given, finishing the subject of appendicitis; on Thursday again clinical material is shown, and operations on appendicitis are done. The following week a recitation on the subject is held. This concentration of teaching on a given subject is found to be of great value.

"The consultation of students and surgeons is of inestimable value, and, while it is not often done in the amphitheatre, yet it is frequently brought about in small sections. In the amphitheatre two students are selected. One gets the clinical history of the case, the other makes the physical examination. They are told that if they wish consultants, they may call them from their fellow-students. The examination of the patient and the consultation are conducted as they would be in private practice. To illustrate the efficiency of the students in this work, the fourth-year class, on one occasion, in the season of 1899–1900, established the diagnosis of filaris sanguinis hominis, and identified the organism under the microscope in the amphitheatre.

"Another method of teaching is to have a formal consultation of a group of surgeons in the presence of the students, each surgeon expressing his views in order of seniority, the case being summed up at the end by the instructor. In both of these instances, if operation is indicated, it is done immediately afterward in the presence of the students, and those pupils who have actively taken part in the consultation assist at the operation.

"The teaching of surgery to small sections of students in the Out-Patient Department has been carried on for a number of years, but from a variety of causes the attendance has been very irregular.

"One of the most valuable forms of teaching is one which was carried out very fully by Dr. Lovett in the wards of the Hospital. 'The students were gathered about the bed in

small numbers — not over twelve — and one of the number was chosen to make a thorough examination, subject to the instructor's correction, to give the diagnosis, the differential diagnosis, the indications for treatment, the nature of the treatment and the principles of prognosis. When a student was unable to answer a question or take the next step his fellows were invited to help him.'

"The fourth-year students have, during the last eight years, been brought more and more in contact with the patient in the ward, and towards the end of their instruction the subject of surgery has been presented to them in small sections from different points of view. For example, sections have been taught surgical therapeutics, office visits, clinical surgical pathology, medico-legal examinations in surgical cases, and a course in sterilization of materials has been given them.

"It will never be possible, nor is it desirable, to have students turned loose in a ward in contact with patients. They must always be under supervision, but they gain a great deal of information and grow in their capacity to do surgical work by being in actual contact with patients."

The establishment of a *concours*, or competitive examination for the positions of internes, or house physicians and house surgeons, was begun with the opening of this Hospital. It did not then exist in this community. It was pronounced by eminent medical men the foremost step in medical education. The City Hospital first enforced it, and for years did it alone. The examinations were held by the staff, or members selected; and was thorough, and strictly fair. No outside influence was tolerated. Many were rejected, and the running was so close that fractions had to be relied on to discriminate. The successful candidates were nominated to the Trustees, and, without exception, appointed. They won a year's residence, board and washing. As a rule the Hospital has thus secured first-rate men.

The City Hospital staff early advocated publishing Hospital Reports, like those of Guy's, St. Bartholomew's, and St. Thomas' Hospitals of London. In 1869 it issued a Quinquennial Report; thence every five years, for twenty-five years; after this it was made an annual and published every

year. It now, after forty years, still continues a year book of Medicine and Surgery, Gynæcology, Pathology and Specialties.

It is the only hospital in Boston publishing such a report. A wide circulation among its 450 alumni (house officers), its staff, the profession, all prominent libraries, foreign and domestic hospitals, medical journals, has induced many exchanges and much favorable comment. It is fair to say that this publication, its competitive examinations, and its vast charitable work, promoted by a liberal municipality, have raised the Hospital to a front rank.

Another cause of the professional status of the Hospital staff is the nominating power, put in their hands by the Trustees, to fill vacancies in their number. In the abstract of the staff records I have spoken of this historically.

NOTE.—Clinical instruction is also given, at the present time, by those teachers of the Tufts Medical School who are connected with the City Hospital staff. Many of the special departments also show clinical cases.

XIII.

REMINISCENCES OF HOUSE OFFICERS.

By John G. Blake, M.D.

I have written to a few of the early house officers of the Hospital for their impressions and memories of its early days. To the men of the present and the future these cannot fail to be of value, relating, as they do, to a time when the Superintendent was not a medical man, and the machinery had not begun to run smoothly. They certainly are of great interest for comparison with the administration of the enlarged and almost perfect-running hospital of to-day.

18 Arlington Street,
Boston, November 5, 1904.

Dear Dr. Blake, — I have kept your communication on file, with the hope that I might be enabled to write something which would be of use to you for the history of the Boston City Hospital.

I have but little to record. I applied for a position at the City Hospital, because it was understood by medical students that candidates were selected on their merits, regardless of extraneous influences. This custom I have no doubt still exists.

I am ever mindful of my obligation to the institution for the opportunity it afforded me of caring for the sick under the direction of those intelligent, kindly and courteous physicians, Drs. Morland, Oliver and Borland. The last was especially stimulating in promoting the investigation of disease. He was a student and a teacher, and most sympathetic in encouraging his earnest assistants.

All these gentlemen were ornaments to the profession, and their example was a standard for their juniors.

I should like to speak a good word for you, but will spare your blushes. We used to think we learned more practical points from you than from the others. Your perpetual youth has made you one of us, and your endurance has made us envious.

Yours sincerely,

(Signed) R. H. Fitz.

217 WARREN STREET,
ROXBURY, November 2, 1904.

JOHN G. BLAKE, M.D. :

DEAR DR. BLAKE, — In accordance with your courteous request I make the following reply.

I naturally look back upon my service as House Officer at the Boston City Hospital from 1868 to 1869 as an epoch in my life. The uniform kindness and the valued instruction which I received from you and Drs. Reynolds and Sinclair, the visiting physicians under whom I served, I shall never forget; nor the life-long friendships which I formed with my fellow house officers.

I think it was a good day for all concerned in the welfare of the Hospital when a physician was appointed superintendent. As to the care of the sick — the modern method of trained nursing is an inestimable advantage. The Hospital had no trained nurses in my time. A few of the nurses were kind, interested in their work and did the best they could; but many of them were hirelings, constantly reporting to the Superintendent if the directions given by the house officers were not to their liking, or in accordance with instructions from him.

The wealth of clinical material in the Hospital, while, of course, not nearly so great as at the present day, was sufficiently large. It could not be used in all its aspects as medical science develops it at the present day, but one found the opportunities for fitting himself for professional life abundant and invaluable.

As time has passed I have naturally found occasion to modify some of the methods I learned at the Hospital more than a generation ago, but they were a foundation which has remained on which to build. To mention one point — with succeeding years I have become less inclined to prescribe alcoholic stimulants in acute disease, and I imagine such has been the experience at the Hospital.

Hoping that these few remarks concerning my life and experience at the Hospital may not be amiss, I remain,

Sincerely yours,

(Signed) FRANCIS W. GOSS.

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536 BEACON STREET,
BOSTON, November 12, 1904.

DEAR DR. BLAKE, — My service as a house officer in the City Hospital was in the Ophthalmic Department, and began, if I remember correctly, the first of April, 1866, lasting for a year. At that time the ophthalmic house officer was a graduate and an externe, and, as his duties kept him at the Hospital only during the hours of the clinic, had little part in the hospital life of the other house officers.

The ophthalmic out-patient service was then held, three mornings in the week, in two rather small rooms in the north end of the basement of the westerly of the two pavilions first built. The clinic was not a large one, and the methods were simple: the ophthalmoscope was used comparatively little, and very little attention was given to determination

of the refraction of the eyes, which now forms so large a part of the work of an ophthalmic clinic. There were beds for ophthalmic house patients, never more than half a dozen, I think, in other rooms in the same basement. One or two private patients were lodged in the second story of the central building. The nurse in charge of the eye patients, Rosa (for a long time connected with the Hospital), slept in an adjoining room. There was no night nurse. She was a good deal of a character, proud of her position, quick, faithful and efficient according to the standard of that day.

Early after my term of service began a medical out-patient service was established, and Dr. C. W. Swan, then pathologist, and I were appointed physicians to out-patients, serving alternate three months, the rooms occupied being the same as those in which the ophthalmic out-patient service was held, but on alternate days. My services in both capacities ceased at the same time, and for at least a year longer the ophthalmic externe served as one of the physicians to out-patients.

Very truly yours,

(Signed) O. F. WADSWORTH.

16 WEST 32D STREET,
NEW YORK, December 2, 1904.

JOHN G. BLAKE, ESQ., M.D., 212 Beacon Street, Boston, Mass.:

MY DEAR DOCTOR, — Mea culpa, mea maxima culpa. I have been derelict in answering your note of inquiry of October 26, but in extenuation of my neglect, let me enter the plea that Canning's needy knife-grinder did, "Story! Good God, sir, I have none to tell." I frankly confess that the reminiscences of my early hospital days are somewhat hazy. As I remember them, I learned a little and enjoyed much; indeed, I look back to my hospital and student days with feelings of mingled pleasure and regret — pleasure that I have enjoyed them, regret that such pleasant moments are granted but once in a mortal's life.

Somehow, at that time of life my recollections were rather of the humorous side, and I can remember better the funny incidents rather than the more serious ones, which, of course, you more especially want. I remember the manners and customs of my seniors who were visiting officers, and for whom I shall always entertain feelings of mingled affection and respect, together with amusement as to their varying characteristics, which made them all the more charming.

As to the care of the sick, I think they got all that was coming to them. As to my own work, modesty forbids my saying how perfect I thought it was, and as to the memories which I carried away from the Boston City Hospital, I can merely say that they are among the pleasantest of my life, not the least of which is the esteem and liking which my former "Visiting," to whom I am now writing, inspired in the breast of his most faithful and obliged pupil.

(Signed) F. R. STURGIS.

DEAR DOCTOR BLAKE, — To have been a house officer of the Boston City Hospital in the year 1864 was to have come into a full and enforced appreciation of the beginnings of things, for carpenters were hammering upon the roof and laborers digging in the cellar when the first patient was admitted to the luxurious housement of Boston's latest evidence of municipal provision for the administration of either charity or justice, according to individual choice of category.

In this beginning of things, not only was the building new, but its provisional administrative equipment as well, and the municipal side of the institution was voiced in its superintendent, the day not yet having come when medical supervision of administrative affairs was regarded as the fitting of responsibility, for the care of the sick, upon the medical profession.

The medical and surgical staff was the least new of all the human equipment, for they had already had a measure of hospital training, but they were facing an entirely new and, in some respects, untried proposition, namely, the relationship of a professional body to a governing body in which political perferment had a part.

The ward tenders were new, there were no trained nurses in those days, the house officers were exceedingly new, and more full of tradition than of knowledge, and there could have been no better illustration of the saying that "All things work together for good" than the Boston City Hospital in the first year of its operative existence.

Whatever deficiencies there may have been in equipment, either mechanical or individual, a plentifulness of good-will served to fill the gap; the very newness of things was in itself a stimulation; the individual relationships had not yet become so crystallized into distinctive forms as to interfere with a sense of personal obligation to the outcome of the whole, and, between staff officers and house officers, house officers and attendants there was a friendly relationship which went very far toward making up for crudities and laying foundation for that spirit in work which has made much of the success of the larger institution of to-day.

Very truly yours,

CLARENCE J. BLAKE, M.D.

XIV.

MEDICAL EDUCATION IN THE HOSPITAL.—THE HOUSE OFFICERS.

By Charles F. Withington, M.D.

By no means the least important function which a hospital fulfils in any community is its educational one. And this service, like many another one, "blesseth him that gives and him that takes." The trustees of this Hospital have never been unmindful of the advantage to our own institution itself as well as to the outside community of utilizing the educational opportunities that are here made possible.

The advantages of studies based upon the aggregation of large numbers of cases of the commoner diseases, and of the observation of those rare affections that are almost unique in the private practice of any one man, are sufficiently obvious. But the important fact is not always recognized that those patients who are made the subjects of the closest investigation and study are the ones to whom the Hospital is able to be of the greatest value.

Patients themselves are apt to recognize this, apart from the selfish gratification in seeing that a great deal of time is being devoted to them. Hence, with the care that is always here taken to protect their feelings, they almost invariably welcome the opportunity of being used for purposes of clinical study and teaching.

The methods in which clinical instructions are given are for the most part such as are familiar in other great hospitals. For the more formal instruction such patients as are able to be comfortably moved and have expressed their willingness are carried to the large amphitheatre and lectured upon before a class. The passing about of plates, charts or specimens, and the demonstration of microscopic preparations go

on simultaneously with the lecture. But here, obviously, the students can do little to verify the results of the physical examinations which are made in their presence. For this much more individualized instruction is necessary, and this is given in small groups or sections of three or four, the student describing what he sees, feels or hears. The effort is made to correlate by means of a given case the student's knowledge which has been derived from many different studies. He gets the *clinical* side of the case, that is, the knowledge derived by questioning and examining the patient, and at the same time confirms and enlarges that knowledge by adding the *laboratory* side of the case, that is, the information gained by the microscopical, chemical or pathological investigation of the diseased tissues or fluids of the body. Only in a hospital can such correlation of medical knowledge be secured.

For example, a man comes to the Out-Patient Department with a cough. The student, under direction of the physician, takes the patient's history, and makes an examination of the chest. This may not be conclusive, but the student takes a specimen of the sputum to the laboratory, and staining it, finds the bacillus of tuberculosis.

Or, a student sees in a ward a patient prostrated with weakness and pallor. After studying the patient with the instructor a drop of the blood is taken, and the microscope settles the question of the nature and probable outcome of the anemia; or, a student, after examining a tumor, sees it removed, and then under direction hardens, makes sections, stains it and examines its microscopic structure, thereby gaining at once a view on all sides of that particular subject. There can be no question that it is the patients used as a text for teaching that receive the minutest study, and that those that have the minutest study (provided, of course, no overtiring or overtaxing of the patient is allowed) are the ones most intelligently and successfully treated.

Such instruction given to students in the Hospital is, of course, entirely the act of such members of the staff as choose to give it, and not of the Hospital itself. To this there has been one exception, namely, the public operations in the

surgical amphitheatre, to which the trustees have allowed access to all medical students. This opportunity of witnessing operations is the only instruction of *students* which the hospital *per se* has undertaken. It has not, however, been its only educational function. The Training School for Nurses, for example, is a great educational institution, run by the Hospital itself, training a body of skilled workers, and at the same time justifying itself as an economic measure by the increased efficiency with which the nursing work is done.

Somewhat similar in its educational value and also in its utility to the Hospital is the institution of the house officers.

These are young men who have recently or nearly completed their medical studies, and who are appointed by the trustees, after examination by and recommendation of the medical and surgical staff, to serve within the Hospital for a definite time, in periods of gradually increased responsibility, under the direction of the visiting staff, whose orders they are to see carried out, and whom they are to inform of matters affecting the patients that may occur in the intervals of the physicians' daily visits.

The first year of the Hospital there were five house officers, two medical, two surgical and an ophthalmic. They served for one year.

Five years later (as we learn from the historical sketch by Dr. J. B. Blake in the House Officers' Alumni Association Report) they were increased to seven. In 1874 they were still further increased, so that each medical and surgical service had a senior and junior.

In 1875 all services were given three men, one of whom served six months in the Out-Patient Department, and the appointments were for eighteen months.

With the increase of medical and surgical services to three on each side, and with the establishment of the gynæcological service, the number of house officers increased still further. In 1894 a clinical clerk and a dresser respectively were added to each medical and surgical service. In 1897 substantially the present system came into vogue, whereby a man was appointed for twenty-four months, which he served in six periods of four months each. Six months of "crossed

service" are provided, during which a medical man gets surgical service, and *vice versa.*

The establishment of the Relief Station and of the South Department (for contagious diseases) greatly extended the educational value of the Hospital for house officers, one of the four months periods being devoted in each of these departments to surgical and medical men respectively. Still further, to equalize the advantages on the medical and surgical sides, the second four-month period of a house-officer's career, which is devoted on the surgical side to a dresser-ship, is given in the case of medical appointees to special "externeship," in the ophthalmological, aural, laryngological, dermatological, neurological and gynæcological out-patient departments.

The ophthalmic and aural and the pathological house officers now serve for twelve months, all the others for twenty-four months.

To determine the fitness of applicants for appointment, three examinations are now held each year, during which candidates are subjected to a strict test of their medical knowledge, and an investigation is made into their character and general fitness by reference to medical men of our own staff and elsewhere with whom they have done any work. They are then finally referred to special examiners, who test their ability in handling cases in the special departments for which they are candidates. In this way the nine persons, who usually received appointments at one time, are winnowed out from the thirty, forty or fifty men who generally apply, and the final selection bears the impress of the opinion of many men of the staff.

These candidates come from various medical schools, each examination being advertised in several cities. Thus often five or six medical schools, from widely separated localities, are represented, and the prized places go impartially to the best men, whatever their source.

Formerly the rule of the Hospital required that appointees should not be holders of a medical degree, but this restriction is no longer in force. Now a candidate *must* have completed at least three years of medical study and *may* be a doctor of

medicine of equally long standing. Following this change, the average age of the house officers is considerably greater than formerly, being now twenty-five or twenty-six years.

The qualifications necessary to make a good house officer are no slight ones. He should have a broad preliminary and a thorough medical education. He must be physically strong. His morals must be good. He must have, besides theoretical knowledge, manual dexterity and aptness. He must be neat. He must have tact with patients and their friends. He must be respectful to his superiors and affable to his inferiors. He must be good tempered and patient. He must be a gentleman.

The Hospital at the present time furnishes in the aggregate sleeping accommodations to twenty-nine house officers. Of these, twenty-one sleep in the main Hospital, the others in the South Department and Relief Station. It sometimes furnishes luncheons to fifty-four men, forty-three in the main Hospital, five in the South Department and six in the Relief Station; that is, it feeds such externes as may be detained by their duties at the Hospital over the lunch hour.

The accommodations furnished the young men have improved with the expansion of the Hospital Bath facilities have been furnished much more liberally. Formerly their sleeping rooms were scattered throughout the institution; now a majority of the men are lodged in the second and third stories of one of the surgical buildings, where they have a small common sitting-room. Despite the onerous duties that devolve upon them, there is still opportunity for much sociability and good fellowship. The writer can testify from his personal experience that the years of hospital residence are by no means the least pleasant part of a young man's educational career.

For out-door exercise the trustees have provided excellent tennis courts, and a "squash court" has been erected, largely by private contribution, supplemented by a gift from the Hospital.

Thus the physical welfare of the young man is pretty well looked to. Yet the records show that at least six of them

have died at their post of duty, mostly from diseases contracted in the Hospital.

This roll of honor should bear the following names:

JAMES G. BRIDGHAM,
FRANK W. HARRIMAN,
ALFRED T. HUNTINGTON,
WALTER G. STEBBINS,
L. WADSWORTH TUCK,
JOSEPH H. CONVERSE, 2d, a substitute house officer.

An association has been in existence for some years which includes five-sixths of the former house officers. It meets annually in February, and is usually invited by the Hospital Trustees to inspect the growth and development of the institution and the advances in its methods. On the evening of the same day the members dine together at a hotel, and old companionships are pleasantly renewed.

The association now numbers 8 honorary, 322 active and 61 associate members, the last group comprising chiefly past and present members of the staff who were never house officers. Sixty-two of the Alumni, covering the forty-one years of the Hospital's history, have died.

In looking over the list of past house officers it is but very rarely that we find any who have proved recreant to the high obligations of their position. But very few have left the medical profession, and nearly all have borne a faithful and honorable, and some a conspicuous, place in the practice of medicine.

The question has sometimes been raised whether the present term of service, two years, is too long. In the interest of the Hospital itself it is evident that the longer these young men stay as house officers the more intelligent, skilful and efficient will be their service. From this point of view alone it is sometimes thought that it would be most advantageous that each man's service should be confined throughout to one particular department. But a canvass of the house officers themselves shows that they consider it desirable to serve (as they do now) a portion of their time on the opposite side of the Hospital from that which takes their chief attention; that is, that a surgical man should see something

of medicine, and *vice versâ*. And it is doubtful if even the Hospital's interest would be subserved by too narrow a specialization. For, as an instance, surgical patients may acquire intercurrent medical diseases which need prompt recognition and treatment, and *vice versâ*.

A limited degree of "crossed service" has therefore been deemed desirable for the sake both of the Hospital and of the young men.

Whether the present term of two years is too long is another question. With some of our best medical schools now requiring the equivalent of a college education before entrance, and with a nearly universal four years' course, the time of a young man's medical training is protracted, and the addition of two years to it may prove to be unduly long. Hitherto there has been no such falling off in the number of applicants as would indicate that the two years of service is felt to be a hardship.*

What becomes of these young men who, after giving the Hospital their zealous service and receiving in return for it a rich mine of experience, go forth to their life work? As might be expected, a majority of them settle in Eastern Massachusetts. But not alone does Greater Boston benefit from the work of these admirably trained physicians. They settle over the country and the world. They are found in every New England State. Something like a score are practising in the City and State of New York. They are in Ohio, Illinois, Utah, Minnesota, Michigan, Arizona, Colorado; six or more are in California; a few are in the border states, Maryland, Kentucky and Missouri. Some are in Canada and Mexico and South America; some in the West Indies, Hawaii and the Philippines. Several have entered the military and naval service of the United States. One, to specify no more, General Leonard Wood, has earned the highest laurels in the triple field of medicine, war and civil administration.

* At the time when this history goes to press the staff have advised and the Trustees have ordered that the term for medical and surgical house officers be reduced, for subsequent appointees, from twenty-four to sixteen months.

XV.

THE PATHOLOGICAL DEPARTMENT OF THE BOSTON CITY HOSPITAL.

By Dr. F. B. Mallory.

The position of pathologist to the Hospital was established when the institution was first opened in 1865. For over twenty-seven years it was held by clinical men, who performed its duties in addition to their clinical work. Since the middle of the year 1891 the position has been held by men who have devoted themselves exclusively to the study and teaching of pathology and to the training of young men in this branch of science. The number of men in the department has grown from the original one to a corps of eight, consisting of a visiting and of two assistant visiting pathologists, of an assistant in clinical pathology, of two assistants in pathology, and of two pathological internes. In addition there are four clerical and technical assistants.

For many years all post-mortem examinations were made in an upstairs room of a small building adjoining the laundry. The bodies were kept in two small rooms on the ground floor, but there was no adequate provision for their proper preservation in hot weather.

No attempt was made to do bacteriological and histological work at the Hospital until early in 1893, when a small, poorly-lighted basement room beneath the present library was obtained for laboratory purposes. Previous to then all microscopic examinations had to be made in the pathological laboratory of the Harvard Medical School.

The present pathological laboratory, with its autopsy amphitheatre, numerous rooms for bacteriological and histological work, and cold storage plant, was formally opened in December, 1895.

The causes which led to the erection of the present pathological laboratory were in the main the greatly increased demands of the general Hospital, and especially of the new contagious department, for bacteriological examinations, and the urgent need of laboratory space so that the post-mortem and surgical material could be worked up and studied both histologically and bacteriologically. Additional necessities were a clinical laboratory for the use of the medical and surgical internes, a cold storage plant for the preservation of bodies, and proper facilities for research work in connection with the pathological material afforded by the Hospital.

The pathological laboratory was established on its present basis May 7, 1897, and since then has been run on the plan of a training school. The first assistant visiting pathologist is on duty throughout the year, and has the immediate direction of the work. Two pathological internes a year are appointed, one at the beginning, the other in the middle of the year. Each interne serves one year. The assistants in pathology serve one year each in the junior and senior positions. They are selected in part from pathological internes who have demonstrated marked ability, in part are chosen from men in other medical schools who have had special training. The assistants in pathology and the pathological internes do most of the bacteriological and pathological work connected with the Hospital, but always under the supervision of the visiting pathologist on duty. This plan has served to attract for the most part a high grade of men to the laboratory, and has given it a favorable reputation. The men who have spent two or three years in the laboratory are always in demand in medical schools and other hospitals as teachers and pathologists. So far the demand for these trained men has greatly exceeded the production.

The teaching carried on in the pathological laboratory includes instruction to the second-year students of the Harvard Medical School during the first half of the school year, to graduate students throughout the year, and to a summer class limited to fourteen for a period of seven weeks during July and August. In addition the laboratory has had working in it a number of voluntary assistants.

The list of the men who have been connected with the pathological department up to the present time is as follows:

Pathologists.

1865–1868. Charles W. Swan, M.D.
1869–1871. S. G. Webber, M.D.
1872–1876. W. P. Bolles, M.D.
1877–1881. E. G. Cutler, M.D.
1882–1890. W. W. Gannett, M.D.
1891. W. W. Gannett, M.D. (resigned May 20, 1891).
H. F. Sears, M.D. (appointed June 18, 1891).

Visiting Pathologist.

1892–1906. William T. Councilman, M.D.

Assistants to Pathologist.

1881. W. W. Gannett, M.D.
1882–1885. H. C. Ernst, M.D.
1888–1890. H. F. Sears, M.D.
1891–1895. F. B. Mallory, M.D.

First Assistant Pathologist.

1896. F. B. Mallory, M.D.

Assistant Visiting Pathologist.

1897–1899. F. B. Mallory, M.D.

First Assistant Visiting Pathologist.

1900–1906. F. B. Mallory, M.D.

Second Assistant Pathologist.

1896. James H. Wright, M.D.

Second Assistant Visiting Pathologists.

1901–1902. Joseph H. Pratt, M.D.
1903–1905. Henry A. Christian, M.D.
1905–1906. Elmer E. Southard, M.D.

Resident Assistant Pathologist.

1894–1895. William Royal Stokes, M.D.
1896. Timothy Leary, M.D.

Second Resident Assistant Pathologist.

1896. Richard M. Pearce, M.D.

First Assistants in Pathology.

1897. Timothy Leary, M.D.
1898. R. M. Pearce, M.D.
1899. Joseph H. Pratt, M.D.
1900. Harry C. Low, M.D.
1901. H. A. Christian, M. D.

1902. W. R. Brinkerhoff, M.D.
1903. Elmer E. Southard, M.D.
1904. Ralph L. Thompson, M.D.
1905. S. Bert Wolbach, M.D.

Second Assistants in Pathology.

1897. R. M. Pearce, M.D.
1898. Lawrence W. Strong, M.D.
1899. Harry C. Low, M.D
1901. W. R. Brinkerhoff, M.D.
1902. Elmer E. Southard, M.D.
1903. Ralph L. Thompson, M.D.
1904. S. Bert Wolbach.
1905. Charles W. Duval.

Assistants in Clinical Pathology.

1897–1901. J. Bergen Ogden, M.D.
1902–1906. Robert L. Emerson, M.D.

In addition to these regular appointments the following men have held temporary positions in the pathological laboratory:

H. C. Emerson, January 2, 1894, to March 18, 1894.
Chas. G. Cumston, May 19, 1894, to May 23, 1894.
Herman W. Cross, January 22, 1897, to January 28, 1897.
W. F. Hendrickson, August 11, 1900, to August 31, 1900.
Joseph H. Saunders, July 1, 1901, to January 21, 1902.

PATHOLOGICAL INTERNES AND HOUSE OFFICERS.

July, 1895. — April 15, 1905.

Gross, Herman W.,
Curry, Joseph J.,
Pinkham, Edward W.,
Downey, William H.,
Barton, William H.,
Walker, David H.,
Magrath, George B.,
Atkinson, Roger T.,
Moser, Albert,
Low, Harry C.,
Fulton, Frank T.,
Steenland, Holbert S.,
Brinckerhoff, Walter R.,
Southard, Elmer E.,
Thompson, Ralph L.,
Hoag, Louis,
Roberts, William F.,
Lee, Ralph E.,
Gifford, Nathaniel H.,
Keene, Clarence W.,
Duval, Charles W.,
Lewis, Paul A.,
Bigelow, Edward B.,
Tyzzer, Ernest E.,
Graham, George S.

The positions now held by some of the men who received more or less of their pathological training in the pathological laboratory of the Boston City Hospital are as follows:

William Royal Stokes, Director of the Board of Health Laboratory, Baltimore.
Timothy Leary, Professor of Pathology and Bacteriology, Tufts Medical School.
Richard M. Pearce, Professor of Pathology and Bacteriology, Albany Medical School; Director of the Bender Hygienic Laboratory.
Joseph H. Pratt, Assistant in the Theory and Practice of Physic, Harvard Medical School.
Henry A. Christian, Instructor in the Theory and Practice of Physic, Harvard Medical School.
Harry C. Low, Assistant Pathologist to the Children's Hospital.
W. R. Brinckerhoff, Director of the Leprosy Station, Molokai.
Elmer E. Southard, Assistant Professor of Neuropathology, Harvard Medical School.
Ralph L. Thompson, Associate Professor of Pathology, University of St. Louis.
George B. Magrath, Assistant in Hygiene, Harvard Medical School.
Frank T. Fulton, Pathologist to Rhode Island Hospital.
H. S. Steensland, Director of the Pathological Laboratory, Syracuse University.
E. E. Tyzzer, in charge of the laboratory work of the Caroline Brewer Croft Cancer Commission.

The work of the laboratory consists of the making of autopsies, of the examination of surgical specimens, and of the bacteriological study of material derived from various sources. The amount of work in each line varies greatly from year to year. The number of autopsies has varied from 200 to 397 in a year. The numbers of swabs from diphtheria throats to be examined in one day has run over 150.

The number of autopsies from 1897 to 1904, inclusive, was 1,934. Almost without exception every autopsy is worked up carefully, both histologically and bacteriologically Three large cabinets each containing 9,000 slides are filled to overflowing. The result is that men interested in any lesion or almost any disease can find in these cabinets from one to a hundred or more examples of whatever they want to study. A carefully prepared cross reference catalogue renders the material easily accessible.

The surgical specimens average about 900 a year. They are examined first by rapid methods for diagnosis only; then the more important ones are embedded and cut by the paraffin method.

The research work carried on in the laboratory is based almost entirely on material and suggestions derived from the routine work. The following list of publications will show what has been accomplished in the past eleven years:

1894.

Councilman, W. T., Gonorrhœal Myocarditis. Medical and Surgical Reports of the Boston City Hospital, 1894, V., 55.

Councilman, W. T., Observations on the Kidneys in a Case of Puerperal Eclampsia. Medical and Surgical Reports of the Boston City Hospital, 1894, V., 93.

Councilman, W. T., A Case of Supposed Syphilis of the Heart. Medical and Surgical Reports of the Boston City Hospital, 1894, V., 86.

Councilman, W. T., A Case of Multiple Ruptures of Internal Organs Produced by a Fall. Medical and Surgical Reports of the Boston City Hospital, 1894, V., 69. Also, Boston Medical and Surgical Journal, 1894, CXXX., 109.

Morse, J. L., Bacteriology of Diphtheria. Medical and Surgical Reports of the Boston City Hospital, 1894, V., 29.

Wright, J. H., Studies in the Pathology of Diphtheria. Boston Medical and Surgical Journal, 1894, CXXXI., 329-335, 357-362.

Wright, J. H., and Emerson, H. C., Ueber das Vorkommen des Bacillus Diphtheriae ausserhalb des Körpers. Centralbl. f. Bakt. u. Parasitenk., 1894, XVI., 412.

1895.

Councilman, W. T., Surgical Pathology, including Inflammation and the Repair of Wounds. Dennis' System of Surgery, 145.

Mallory, F. B., Ueber gewisse eigenthümliche Färbereactionen der Neuroglia. Centralb. f. Allg. Path. u. Path. Anat., 1895, VI., 753-758.

Mallory, F. B., A Case of Actinomycosis. Medical and Surgical Reports of the Boston City Hospital, 1895, VI., 179. Also, Boston Medical and Surgical Journal, 1895, CXXXII., 296.

Morse, J. L., A Clinical and Experimental Study of the Leucocytosis of Diphtheria. Medical and Surgical Reports of the Boston City Hospital, 1895, VI., 190. Also, Boston Medical and Surgical Journal, 1895, CXXXII., 228.

Prescott, W. H., Seven Cases of Primary Carcinoma of the Liver. Medical and Surgical Reports of the Boston City Hospital, 1895, VI., 268.

Taylor, E. W., Two Cases of Syphilis of the Central Nervous System. Medical and Surgical Reports of the Boston City Hospital, 1895, VI.

Wright, J. H., On the Cultivation of Gonococcus from Cases of Gonorrhœa, Ophthalmia Purulenta, and Pyosalpinx. American Journal of the Medical Sciences, 1895, CIX., 109.

Wright, J. H., and Mallory, F. B., Ueber einen pathogenen Kapselbacillus bei Bronchopneumonie. Zeitsch. f. Hyg. u. Infectionskrankh., 1895, XX., 220-226, 1 pl.

Wright, J. H., and Stokes, W. R., A Report on the Bacteriological Investigations of Autopsies. Medical and Surgical Reports of the

Boston City Hospital, 1895, VI., 211. Also, Boston Medical and Surgical Journal, 1895, CXXXII., 271, 330.

1896.

Councilman, W. T., and Mallory, F. B., A Study of Lesions in Selected Autopsies. Medical and Surgical Reports of the Boston City Hospital, 1896, VII., 216-272.

Taylor, E. W., Two Cases of Tumor of the Brain, with Autopsy. Boston Medical and Surgical Journal, 1896, CXXXIV., 57.

Wright, J. H., Adenocarcinoma of the Pancreas Producing Multiple Strictures of the Intestines. Medical and Surgical Reports of the Boston City Hospital, 1896, VII., 273-281.

Wright, J. H., The Histological Lesions of Acute Glanders in Man and of Experimental Glanders in the Guinea Pig. Journal of Experimental Medicine, 1896, I., 577.

1897.

Councilman, W. T., An Anatomical and Bacteriological Study of Forty-nine Cases of Acute and Subacute Nephritis with Special Reference to the Glomerular Lesions. Medical and Surgical Reports of the Boston City Hospital, 1897, VIII., 31-110.

Curry, J. J., A Report on the Bacteriological Investigations of Three Hundred and Twelve Cases of Surgical Infection. Medical and Surgical Reports of the Boston City Hospital, 1897, VIII., 111-128. Also, Boston Medical and Surgical Journal, 1897, CXXXVI., 374.

Leary, T., On an unusual Pathogenic Action of the Diphtheria Bacilli. Medical and Surgical Reports of the Boston City Hospital, 1897, VIII., 129-133.

Mallory, F. B., On Certain Improvements in Histological Technique. Journal of Experimental Medicine, 1897, II., 529.

Munro, J. C., and Councilman, W. T., A Case of Amœbic Abscesses of the Liver, with Autopsy. Medical and Surgical Reports of the Boston City Hospital, 1897, VIII., 352-358.

Pearce, R. M., The Bacteriology of Lobar and Lobular Pneumonia; Various Infections Due to the Diplococcus Lanceolatus. Boston Medical and Surgical Journal, 1897, CXXXVII., 561.

1898.

Councilman, W. T., Acute Interstitial Nephritis. The Journal of Experimental Medicine, 1898, III., 393.

Councilman, W. T., Mallory, F. B., and Wright, J. H., Epidemic Cerebrospinal Meningitis. A Monograph published as a Report of the State Board of Health of Massachusetts.

Curry, J. J., A Report of a Case of Appendicitis, showing the Relation of the Colon Bacillus and the Streptococcus Pyogenes as Etiological Factors. Medical and Surgical Reports of the Boston City Hospital, 1898, IX., 260.

Mallory, F. B., A Histological Study of Typhoid Fever. Journal of Experimental Medicine, 1898, III., 611-638, 8 plates.

Ogden, J. B., Hæmatoporphyrinuria, with the Report of a Case. Medical and Surgical Reports of the Boston City Hospital, 1898, IX., 210-216.

Pearce, R. M., The General Infections and Complications of Diphtheria and Scarlet Fever, a Bacteriological Study of One Hundred and Fifty-seven Cases. Medical and Surgical reports of the Boston City Hospital, 1898, IX., 86-105.

Strong, L. W., Two Cases of Amœbic Enteritis. Medical and Surgical Reports of the Boston City Hospital, 1898, IX., 249-259.

Thomas, J. J., Acute Degeneration of the Nervous System in Diphtheria. Medical and Surgical Reports of the Boston City Hospital, 1898, IX., 52-85.

1899.

Councilman, W. T., The Character of the Cellular Exudation in Acute Keratitis of the Rabbit. Journal of the Boston Society of Medical Sciences, 1899, III., 99.

Magrath, G. B., Observations upon the Elastic Tissue of Certain Human Arteries. Journal of the Boston Society of Medical Sciences, 1899, III., 139.

Morse, J. L., The Blood in Diphtheria. Medical and Surgical Reports of the Boston City Hospital, 1899, X., 138.

Pearce, R. M., The Bacteriology of the Accessory Sinuses of the Nose in Diphtheria and Scarlet Fever. Journal of the Boston Society of Medical Sciences, 1899, III., 215.

Pearce, R. M., Scarlet Fever, its Bacteriology and Gross and Minute Anatomy. Medical and Surgical Reports of the Boston City Hospital, 1899, X., 39-82.

Pratt, J. H., Secondary Infection of the Skin and Subcutaneous Tissues by the Bacillus Typhosus. Medical and Surgical Reports of the Boston City Hospital, 1899, X., 124-129.

Strong, L. W., Two Cases of Infection with the Bacillus Capsulatus Mucosus Friedländer. Medical and Surgical Reports of the Boston City Hospital, 1899, X., 117-123.

Strong, L. W., A Study of the Encapsulated Bacilli. Journal of the Boston Society of Medical Sciences, 1899, III., 185.

Thomas, J. J., Two Cases of Injury of the Cord Resulting from Fracture of the Spine. Boston Medical and Surgical Journal, 1899, CXLI., 233.

Thomas, J. J., Bone Tumor in the Human Brain, Surrounding Encysted Coccidia Oviformia. Medical and Surgical Reports of the Boston City Hospital, 1899, X., 102-116.

Walker, D. H., Actinomycosis. Medical and Surgical Reports of the Boston City Hospital, 1899, X., 130-137.

1900.

Councilman, W. T., The Lobule of the Lung and Its Relation to the Lymphatics. Journal of the Boston Society of Medical Sciences, 1900, IV., 165.

Councilman, W. T., Mallory, F. B., and Pearce, R. M., A Study of the Bacteriology and Pathology of Two Hundred and Twenty Fatal

Cases of Diphtheria. Journal of the Boston Society of Medical Sciences, 1900, V., 139–321, 17 plates.

Lothrop, H. A., and Pratt, J. H., A Report of Two Cases of Filariasis. American Journal of Medical Sciences, 1900, CXX., 525.

Low, H. C., Bacteriological Report of One Hundred Cases of Acute Appendicitis. Medical and Surgical Reports of the Boston City Hospital, 1900, XI., 173.

Mallory, F. B., A Contribution to Staining Methods. Journal of Experimental Medicine, 1900, V., 15.

Mallory, F. B., Proliferation and Phagocytosis. Journal of Experimental Medicine, 1900, V., 1. Trans. of the Association of American Physicians, 1900.

Moser, A., Tuberculosis of the Heart. Medical and Surgical Reports of the Boston City Hospital, 1900, XI., 194–203.

Pratt, J. H., The Histology of Acute Lobar Pneumonia. Contributions to the Science of Medicine (by pupils of Dr. W. H. Welch), 1900, 265.

Pratt, J. H., A Case of Filariasis in which the adult worms were found. Transactions of Association of American Physicians, 1900.

Pratt, Joseph H., and Fulton, F. T. Report of Cases in which Bacillus Ærogenes Capsulatus was Found. Boston Medical and Surgical Journal, 1900, CXLII., 599.

Thomas, J. J., Five Cases of Injury of the Cord, Resulting from Fracture of the Spine. Medical and Surgical Reports of the Boston City Hospital, 1900, XI., 1–25.

Thomas, J. J., and Hibbard, C. M., Heart Failure in Diphtheria. Medical and Surgical Reports of the Boston City Hospital, 1900, XI., 204–226.

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Brinckerhoff, W. R , and Thompson, R. L. Report of a Case of Acute Lobar Pneumonia, due to the Bacillus Mucosus Capsulatus. Medical and Surgical Reports of the Boston City Hospital, 1901, XII., 149–158.

Christian, H. A., A Case of Cholecystitis from which the Bacillus Mucosus Capsulatus was Isolated in Pure Culture. Medical and Surgical Reports of the Boston City Hospital, 1901, XII., 135–137.

Christian, H. A., Dermoid Cysts and Teratomata of the Anterior Mediastinum. Medical and Surgical Reports of the Boston City Hospital, 1901, XII., 114–134.

Low, H. C., A Case of Papillary Adenocystoma of the Thyroid Gland. Medical and Surgical Reports of the Boston City Hospital, 1901, XII., 163–167.

Low, H. C., and Lund, F. B., Tubular Perivascular Sarcoma, Its Origin, Structure and Metastasis. Medical and Surgical Reports of the Boston City Hospital, 1901, XII., 168–201. Also, Journal of Medical Research, 1902, VII., 83.

Mallory, F. H., Necroses of the Liver. Journal of the Boston Society of Medical Sciences, 1901, VI., 264.

Pratt, J. H., Typhoid Cholecystitis with Observations on Gall-stone Formation. American Journal of Medical Sciences, 1901, CXXII., 584.

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Steensland, H. S., Acute Degeneration of the Nervous System, the Muscles, and the Heart in Diphtheria. Additional cases. Medical and Surgical Reports of the Boston City Hospital, 1901, XII., 159–162.

Thomas, J. J., Cholesteatomata of the Brain. Journal of Medical Research, 1901, VI., 220.

Thomas, J. J., A case of Myeloma of the Spine, with Compression of the Cord. Boston Medical and Surgical Journal, 1901, CXLV., 367.

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Brinckerhoff, W. R., On the Erythrogenic Spleen of Mephitis Mephitica. (Bullard Fellowship.) Journal of Medical Research, 1902, VIII., 446.

Brinckerhoff, W. R., and Southard, E. E., Erythragglutinins in a Cyst Fluid. (Bullard Fellowship.) Medical and Surgical Reports of the Boston City Hospital, 1902, XIII., 135.

Brinckerhoff, W. R., and Tyzzer, E. E., On Amphophile Leucocytogenesis in the Rabbit. (Rockefeller and Bullard Fellowships.) Journal of Medical Research, 1902, VIII., 449.

Brinckerhoff, W. R., and Tyzzer, E. E., On Physiological Leucocytoses of the Rabbit. Journal of Medical Research, 1902, VII., 191–201.

Brinckerhoff, W. R., and Tyzzer, E. E., On the Leucocytes of the Circulating Blood of the Rabbit. Journal of Medical Research, 1902, VII., 173–190.

Christian, H. A., Ependymal Epithelium as a Constituent of a Teratoma. Medical and Surgical Reports of the Boston City Hospital, 1902, XIII., 161–165. Also, Boston Medical and Surgical Journal, 1902, CXLVII., 673.

Christian, H. A., Secondary Carcinoma of the Liver, with Report of a Case in which the Liver Weighed 15,110 gms. (33⅓ lbs.). Medical and Surgical Reports of the Boston City Hospital, 1902, XIII., 166–178. Also, American Medicine, 1902.

Christian, H. A., The Appendix Vermiformis at Autopsy. Contributed for a chapter in a treatise on appendicitis by Howard A. Kelly.

Christian, H. A., and Lehr, L. C., Subphrenic Abscess as a Complication of Appendicitis. Medical and Surgical Reports of the Boston City Hospital, 1902, XIII., 179–190. Also, Medical News, N. Y., 1903.

Councilman, W. T., Glanders. Reference Handbook of the Medical Sciences, 1902, IV., 352.

Councilman, W. T., Inflammation. Reference Handbook of the Medical Sciences, 1902, V., 1.

Crandon, L. R. G., The Pathogenesis and Pathological Anatomy of Enlarged Prostate. Medical and Surgical Reports of the Boston City Hospital, 1902, XIII., 22. Also, Annals of Surgery, 1902.

Mallory, F. B., Three Gliomata of Ependymal Origin. Journal of Medical Research, 1902, VIII., 1.

Thompson, R. L., Pylephlebitis and Liver Abscesses Following Appendicitis. Medical and Surgical Reports of the Boston City Hospital, 1902, XIII., 140–160.

Tyzzer, E. E., Coccidium Infection of the Rabbit's Liver. Journal of Medical Research, 1902, VII., 235.

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Christian, H. A., The Fats of Pneumonia Exudations. Journal of Medical Research, 1903, X., 109.

Christian, H. A., Neuroglia Tissue and Ependymal Epithelium in Teratoid Tumors. Journal of American Medical Association, 1903, XLI., 593.

Christian, H. A., A Sketch of the History of the Treatment of Chlorosis with Iron. Medical and Historical Journal, 1903.

Councilman, W. T., Tuberculosis. Reference Handbook of the Medical Sciences, 1903, VII., 886.

Councilman, W. T., Rhinoscleroma. Reference Handbook of the Medical Sciences, 1903, VI., 971.

Councilman, W. T., Magrath, G. B., Brinckerhoff, W. R., A Preliminary Report on the Etiology of Variola. The Journal of Medical Research, 1903, IX., 372.

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Southard, E. E., and Roberts, W. F., A Case of Chronic Internal Hydrocephalus in a Youth. Medical and Surgical Reports of the Boston City Hospital, 1903, XIV., 45–52. Also, Journal of Nervous and Mental Diseases, 1904.

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Southard, E. E., and Sims, F. R., A case of Cortical Hemorrhages following Scarlet Fever. Journal American Medical Association, 1904.

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Southard, E. E., and Keene, C. W., A study of Acute Hemorrhagic Encephalitis (Staphylococcus pyogenes aureus). American Journal of Medical Sciences, 1905.

Southard, E. E., A case of Glioma of the Pineal Region. American Journal of Insanity, 1905.

A careful examination of these publications will show that the laboratory has made many valuable contributions to the subjects of bacteriology and pathology. Most deserving of special mention are the three monographs, two of which are based exclusively on cases coming to autopsy at the Boston City Hospital, namely those on Epidemic Cerebrospinal Meningitis and Diphtheria. The third monograph, on Variola and Vaccinia, is based on material obtained outside of the Hospital, but in large part through the energy of the first assistant in pathology, who was given leave of absence for that purpose by the Hospital.

Attention should also be called to the many shorter papers, in part bacteriological, but chiefly pathological, on such subjects as typhoid fever, scarlet fever, acute and sub-acute glomerulonephritis, etc., as well as to the large series of papers on neuropathological subjects.

The laboratory has made several useful technical contributions, such as the aniline blue connective tissue stain and the phosphotungstic acid hematein stain for neuroglia, fibroglia, and myoglia fibrils.

Two discoveries by members of the pathological staff deserve mention here, because they may later prove of much value. The first of these is the confirmation of the work of Wasielewski and Guarniere that the peculiar bodies found in the cytoplasm of the epithelial cells in the lesions of variola and vaccinia represent different stages in the life cycle of a protozoon (cytoryctes variolae), and the demonstration that another cycle of development of the protozoon takes place within the cell nuclei in variola, but not in vaccinia. This original observation has since led to a large amount of experimental work on monkeys, carried on for a year in the Philippines and not yet published.

The second discovery was the finding of protozoon-like bodies in the skin of several scarlet fever cases. This has since been confirmed by obtaining the bodies from living patients by means of vesication of the skin, and has led to some experimental work on monkeys, which is still in progress.

XVI.

THE GYNÆCOLOGICAL SECTION.

By Charles M. Green, M.D.

In the early years of the Boston City Hospital no special provision was made for the treatment of diseases peculiar to women. The comparatively few gynæcological cases that presented themselves were received in the medical and surgical out-patient departments, or were admitted, according to circumstances, to the medical or surgical wards. It was not until 1873 that in the progress of events a special service was created for this class of cases, when on December 23 the trustees appointed two "physicians for diseases of women in the out-patients department," and assigned for their use a small room in the Lodge. Dr. William E. Boardman inaugurated the service in January, 1874, and continued on duty for six months. Meanwhile, in their annual revision of appointments in the spring of 1874, the trustees failed to reappoint Dr. Boardman's original colleague, who thus had no service in the department, but named in his stead Dr. James R. Chadwick. Clinics were held three days a week. Each physician served for six months in the year; and each was independent of his associate, being responsible only to the trustees through the visiting medical staff.

Dr. Chadwick resigned in 1883, after a service of nine years, and Dr. George H. Bixby was appointed in his place. Dr. Bixby resigned the following year, and in October, 1884, was succeeded by Dr. Charles M. Green. After a service of fourteen years, Dr. Boardman resigned in 1888, and at this time, on the recommendation of the visiting staff, the trustees made an important change in the administration of this service. It was decided to place the department in the charge of one physician, who should be responsible for the

service during the entire year. He was allowed an assistant in the medical work; but the general administration of the department was vested in the physician in charge. Dr. Green was placed in charge of the service, and in 1889 Dr. George Haven was appointed his assistant. Under the new plan uniformity of methods and details was secured; but the inadequate accommodations afforded the department in the old out-patient building hampered its development and prevented the realization of the full advantages of the administrative change.

In January, 1890, a new out-patient building in the southwest corner of the Hospital grounds (the present entrance Lodge) was opened for use, and the needs of the department for diseases of women were amply provided for. In addition to a suitable waiting room and a large consulting room, two well-equipped examining rooms were provided, and it was thus possible for the physician in charge and his assistant to work together. Continuous service was thus made possible, to the advantage alike of patient and physician. For the first time a nurse was provided to prepare patients suitably for examination and treatment; moreover, enlarged opportunities were afforded for teaching, one of the chief functions of hospitals, second only to the care of the sick.

Prior to 1892 gynæcological cases requiring operative or house treatment were received in the medical and surgical wards. Those needing major operations were necessarily admitted to the surgical services; but the great majority of minor cases were treated in the medical wards, particularly in Ward S. All the visiting physicians were expected to take charge of these cases during their respective services; but those who were most interested in this work were Drs. J. G. Blake, G. H. Lyman, E. J. Forster and O. W. Doe. The trustees, in their report for the year ending January 31, 1893, state that "previous to the present year (1892) there has been no service distinctly devoted to the treatment of diseases of women. Patients admitted to the Hospital requiring special treatment were assigned to Ward S, and such patients were taken care of by those of the visiting physicians who were especially interested in that class of practice.

Incident to the growth of the Hospital, the number of such cases had become so large that it was evident that they should receive special treatment in a ward specially assigned for such service. The trustees, therefore, during the present year have created a gynæcological service. Ward S has been set aside for the special reception of such cases, and John G. Blake, M.D., and Edward J. Forster, M.D., have been appointed visiting physicians for diseases of women."

On the establishment of this service and the necessary appointment of a house staff, there came about an advantageous change in the out-patient department. Thus far the physician for diseases of women to out-patients had had the assistance of an externe house officer who served also as ophthalmic and aural externe; but in 1893 the position of gynæcological externe was established, and the incumbent thereafter assisted in the department for diseases of women on clinic days, and on alternate days in the department for diseases of the nervous system and in the surgical out-patient department. In 1893, also, the position of assistant visiting physician was established, and Charles M. Green, M.D., was promoted to this place; he was given an independent period of duty, however, and thus it resulted that each of the three physicians did four months' service each year. Unlike the out-patient department, the house service had no responsible head; each physician was practically independent of his colleagues. Although the two visiting physicians were supposed to exercise a supervision over the out-patient department, the relation was merely nominal; the ideal organization was not yet accomplished.

On the promotion of Dr. Green to the house service, Dr. Haven was appointed physician for diseases of women to out-patients, and Dr. Edward Reynolds was made his assistant.

The work of the house service gradually increased, and in a few years Ward S became inadequate to provide for the gynæcological cases applying for hospital care. Finally, in 1896, the trustees converted a male medical ward (Ward H) to the use of the gynæcological department; but the operating rooms, which had been constructed eighteen years

previously, were entirely unsuited to meet the demands of modern surgery, and an appropriation was asked for to make the necessary alterations and improvements in Wards S and H. It also became necessary to enlarge the house staff, and the position of gynæcological clinical clerk was created.

On May 15, 1896, Dr. Edward J. Forster died suddenly in New York, of cerebral hæmorrhage. He was returning

EDWARD J. FORSTER, M.D.

from Philadelphia, whither he had gone on official duty as Surgeon-General of Massachusetts.

For sixteen years Dr. Forster had served the Hospital in various capacities, and at the time of his death was secretary of the visiting staff as well as visiting physican in this department. In their report for the year the trustees quote from their records the following minute expressing their appreciation of Dr. Forster's service and character: "In the performance of his duties he was earnestly conscientious, unwearying and efficient; he served his patients with kind-

ness of heart and persistent devotion, and he gave his associates sterling generosity and helpful intelligence. In his decease the Hospital has lost a devoted helper, his associates a faithful friend and the community a valuable and public-spirited citizen."

To fill the vacancy caused by Dr. Forster's death, Dr. Green was promoted, June 18, 1896, to be visiting physician; Dr. Haven was subsequently made assistant visiting physician. Dr. Reynolds became physician for diseases of women to out-patients, and Frank A. Higgins, M.D., was appointed his assistant.

During the ensuing years it came to be recognized that the system under which the surgical and gynæcological departments were administered was far from satisfactory. No service had a responsible head; the visiting surgeons were overworked; the out-patient surgeons had little or no opportunity for experience in the wards. These and other considerations led to a careful study of improved administrative measures, extending over many months, by committees of the trustees and of the visiting staff. As a result of these efforts a new administrative plan for the surgical services was recommended by the staff, approved by the trustees, and put into effect in 1897; and on April 20, 1898, the trustees, on recommendation of the staff, adopted the following rules, similar to those governing the surgical staff, for the administration of the gynæcological service:

The gynæcological service, both house and out-patient, shall have a senior visiting physician, a junior visiting physician, a first assistant visiting physician, a second assistant visiting physician and a third assistant visiting physician for diseases of women.

The senior visiting physician for diseases of women shall have the general direction of the service during the entire year. He shall be on active duty for a period not exceeding four months. When on duty he shall have the assistance of one or more of the assistant visiting physicians belonging to the service, in case he desires it. He shall take full charge of such cases as he wishes, and may assign such of his work to the assistant visiting physician as he sees fit. He shall also have the right to take entire charge of such cases as he desires, when not on active duty, and for such time as he wishes.

The junior visiting physician for diseases of women shall be on active duty at least four months. When on duty he shall have full charge of the wards, being responsible, however, to the senior visiting

physician. He shall take full charge of such cases as he wishes, and may assign such of his work to the assistant visiting physicians as he sees fit, having, when on active duty, the same privileges in respect to the services of the assistant visiting physicians as the senior visiting physician enjoys when he is on duty. He shall also have the general direction of the service when the senior visiting physician, from absence, illness or other reasons, is unable to perform his duty.

The first assistant visiting physician for diseases of women shall carry out the direction of his senior in the service, both in the wards and in the out-patient department. His special service shall be in the hospital wards. When on duty he shall have full charge of the wards, being responsible, however, to the senior visiting physician of the service. He shall have the same privileges in respect to the assistance of the other assistant visiting physicians in the department which his seniors have when on duty.

The second assistant visiting physician for diseases of women shall be on duty in the out-patient department during the regular months assigned to him, and during those months, as well as during the rest of the year, his services shall be at the disposal of his seniors, and he shall have charge of the wards during such time as his seniors shall direct.

The third assistant visiting physician for diseases of women shall perform duties essentially the same as the second assistant, except that his work shall be more closely identified with the out-patient department. His services shall, however, be at the disposal of his seniors in the service.

When the exigencies of the service require a fourth assistant visiting physician for diseases of women, for a limited period, an appointment of such assistant, for a term not exceeding six months, may be made by the Board of Trustees, on nomination of the senior and junior visiting physicians of the service.

Each assistant visiting physician for diseases of women may have a vacation of two months in the year, and shall have a vacation of at least one month in the summer, in addition, if he wishes it.

Thus, after ten years, the administrative principle established in the out-patient department in 1888 was extended to the house service. A careful examination of the new rules and a study of their application show them to be advantageous alike to patients, to the staff, to medical education, and consequently to the Hospital; and the experience of six years has proved them to be so. Dr. Blake was given the title of senior visiting physician, and placed in charge of the department. Dr. Green was made junior visiting physician, and Drs. Haven, Reynolds and Higgins became first, second and third assistant visiting physicians respectively. In 1899 the long delayed reconstruction of the operating, ster-

ilizing, etherizing and recovery rooms was completed, and the department was thoroughly equipped for modern surgical work.

In the spring of 1900, after an active service in the Hospital of thirty-six years, Dr. John G. Blake resigned from the gynæcological department, and was appointed a senior physician to the Hospital. Dr. Green was thereupon promoted to be senior visiting physician; and in 1901 Drs. Haven, Reynolds and Higgins received promotion to the positions of junior visiting physician and first and second assistant visiting physicians respectively. Dr. Franklin S. Newell was appointed third assistant visiting physician. The resignation of Dr. Reynolds the following year led to the promotion of Drs. Higgins and Newell to be first and second assistant visiting physicians; and Dr. Ernest B. Young was appointed third assistant visiting physician. Early in 1903 the rules were amended to provide for the appointment of an additional third assistant visiting physician, and Dr. Leo V. Friedman was appointed to the position.

On September 27, 1903, after a brief illness, Dr. Haven died. He had served the Hospital in this department more than fourteen years. In their report for the year the trustees said: "He was a skilful operator, brilliant in many things, and made a name for himself in the profession, notably in his specialty. The trustees desire publicly to express their regrets at the loss the Hospital has sustained in the death of Dr. Haven in the prime of his professional life." In 1903, also, Dr. Higgins resigned, and Drs. Newell and Young were promoted to be first and second assistant visiting physicians respectively.

In the year 1903 further changes were made in the titles, tenures and assignments to service of the house staff. Several years previously the title of gynæcological clinical clerk had given place to that of surgical dresser; but the incumbent of this office was not in line of promotion. It was now thought expedient to lengthen the service of a gynæcological house officer from eighteen months to two years; to appoint a successful candidate, first, as surgical dresser, and, if recommended by the visiting staff, to pro-

mote him successively, after six months' acceptable service in each preceding grade, to the positions of externe, interne and gynæcological house physician.

In May, 1904, after many vexatious delays, the new out-patient building, erected on the site of the "Old Lodge," was ready for use, and admirable accommodation for the out-patient gynæcological service was provided on the second story of the west wing. Besides a waiting room and a consultation and record room, there are three examining rooms and a surgical dressing room, and the department is well equipped for creditable work.

The history of the gynæcological section would be incomplete without reference to those who have temporarily served the department, from time to time, as fourth assistant visiting physicians. The names of these gentlemen and their respective terms of service are as follows:

Edward P. Starbird, M.D., April 1, 1899, to October 1, 1899.
Franklin S. Newell, M.D., November 1, 1899, to May 1, 1900.
Frederick W. Stetson, M.D., July 1, 1900, to October 29, 1900.
John H. Pettee, M.D., November 1, 1900, to May 1, 1901.
Foster H. Cary, M.D., May 1, 1901, to November 1, 1901.
Leo V. Friedman, M.D., November 1, 1901, to May 1, 1902.

The following biographical sketch is contributed by George G. Sears, M.D.:

Dr. George Haven was born in Portsmouth, N. H., July 13, 1861, and died in Boston, September 27, 1903. After graduating from the Harvard Medical School in 1882 he served a year as house physician at the Boston Children's Hospital. The next two years were spent abroad, where in the hospitals of Munich and Vienna he devoted himself to the study of obstetrics and gynæcology. In 1887 he began practice in Boston. He was connected with the Boston Dispensary from 1887 until his death, at first as district physician, later as physician for diseases of women. He was physician to out-patients in the Lying-in Hospital for ten years, resigning in 1900. Here he initiated a series of Cæsarean sections, the success of which had much influence in this community in establishing the value and safety of the operation. As assistant in obstetrics at the Harvard Medical

School and later as instructor in gynæcology he showed decided ability as a teacher. His connection with the Boston City Hospital began in 1889, when he was appointed assistant to the physician for diseases of women in the out-patient department. After the department of gynæcology was organized with a house service he was made assistant visiting physician, and later junior visiting physician, which position

GEORGE HAVEN, M.D.

he held at the time of his death. Both in his hospital work and in private practice he gave significance and dignity to the specialty of obstetrics and gynæcology during a period when the necessity of recognizing such a specialty was doubted by a large number of the profession. As a surgeon he was accurate in diagnosis and sound in judgment, while as an operator he was skilful, careful, resourceful and successful. Conservative yet bold, he was willing to assume the largest measure of responsibility, but the interests of his patient were never forgotten. As a physician his strong personality

and reassuring presence, his tact, confidence and tireless devotion brought hope and comfort to the sick room. His patients were his friends, whose love and trust he possessed to a remarkable degree, and to whom his services were freely offered without thought of self. As a consultant his practice constantly increased as his diagnostic ability and operative skill became more widely known. His high sense of responsibility and tact peculiarly qualified him for the exacting requirements of this relation, for while inflexibly recognizing the welfare of the patient as his first duty, the interests of the physician in charge were carefully guarded. His professional success was already definite and assured. A longer life could have but enlarged its measure.

XVII.

THE X-RAY DEPARTMENT AT THE BOSTON CITY HOSPITAL.

By Francis H. Williams, M.D.

The X-Ray Department was established at the Hospital unofficially in May, 1896, when permission was given Dr. Francis H. Williams to set up an X-Ray apparatus in a small room in the basement of the Library Building.

The difficulties encountered in obtaining suitable apparatus at first is illustrated by the fact that at least a dozen different varieties, coils and static machines, were set up and used for a longer or shorter period during the first two years. In 1898 a static machine having plates six feet in diameter was used, and up to the present time has proved as satisfactory as any piece of apparatus employed. The designing and making of appliances that were both simple and efficient to facilitate the work was kept steadily in mind from the beginning. Among the devices that were first used at this Hospital, and which were subsequently adopted elsewhere, may be mentioned the adjustable multiple spark-gap, which permits a larger or smaller amount of spark-gap to be used (the light may thus be readily varied), and yet ensures a perfectly steady light, an essential in making fluoroscopic examinations of the chest; diaphragms of lead to improve the definition and the covering of the tube to protect the patient and the physician from the X-Rays. The Rollins box, an invention of Dr. William Rollins of Boston, deserves special mention in this connection. It consists of a box, in which the Crookes' tube is placed, that is lined with a material not penetrated by the rays, and at the same time one that is a non-conductor of electricity. There is an opening in the box through which the rays are allowed to pass. The value of

the Rollins box is constantly gaining recognition, now that the dangers of the X-Rays are more fully appreciated. The freedom at this Hospital from the very serious results that have followed the use of the X-Rays in many other places, which have involved the loss of fingers, hands, arms, or even

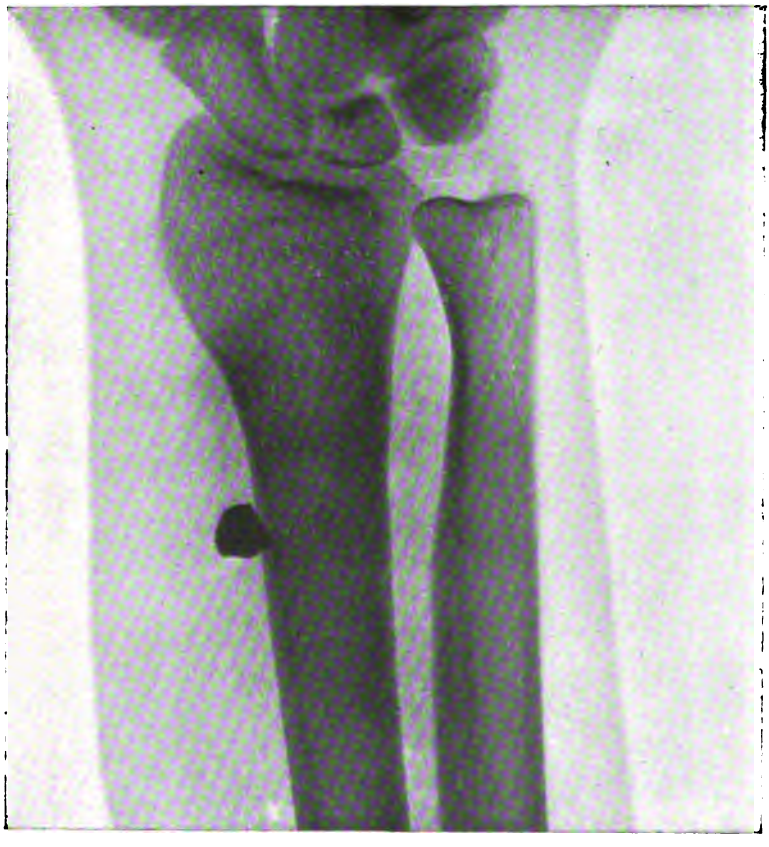

FIG. 1. Piece of steel in arm. Found only after radiographs were made. Antero-posterior view.

life itself, is attributable to the use of the simple and efficient means of protection which has been employed and advocated at this Hospital. Another device suggested by Dr. Rollins for the protection of the physician when making fluoroscopic examinations is the interposition of a glass plate between the fluorescent screen and the eyes of the observer and the use

of metal to prevent the X-Rays from penetrating the box of the fluoroscope and injuring the practitioner. Modified forms of these devices are used at the Hospital.

Fluorometer alone and with aluminum plates. The dose of X-Rays given in therapeutic cases has not been easily determined. In order to measure the amount of rays issuing

FIG 2. Mrs. H. Fracture of third metacarpal bone. Antero-posterior view.

from the Crookes' tube, Dr. Francis H. Williams devised what he has called a fluorometer, and by using this instrument in connection with aluminum plates of different thicknesses he has also been able to determine the proportion of rays of different degrees of penetration issuing from the tube. The usefulness of this instrument, alone and in connection with aluminum plates, for therapeutic work will be appreciated when it is realized that by their means the

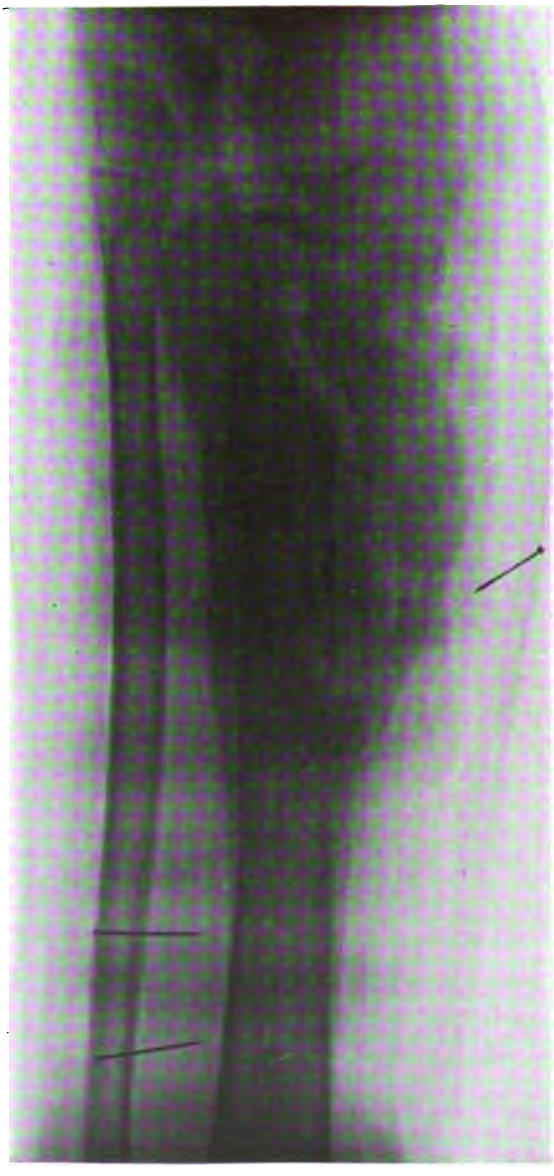

FIG. 3. Shows the appearances seen in a case of disease of the bone, from the Surgical Out-Patient Department.

amount and kind of X-Rays desired can be measured and applied, and therefore a definite dosage can be used of the kind of rays adapted to the special patient.

The value of the fluorometer is evident also for photographic work, as the time of exposure of any given thickness of tissue can be more accurately determined when the

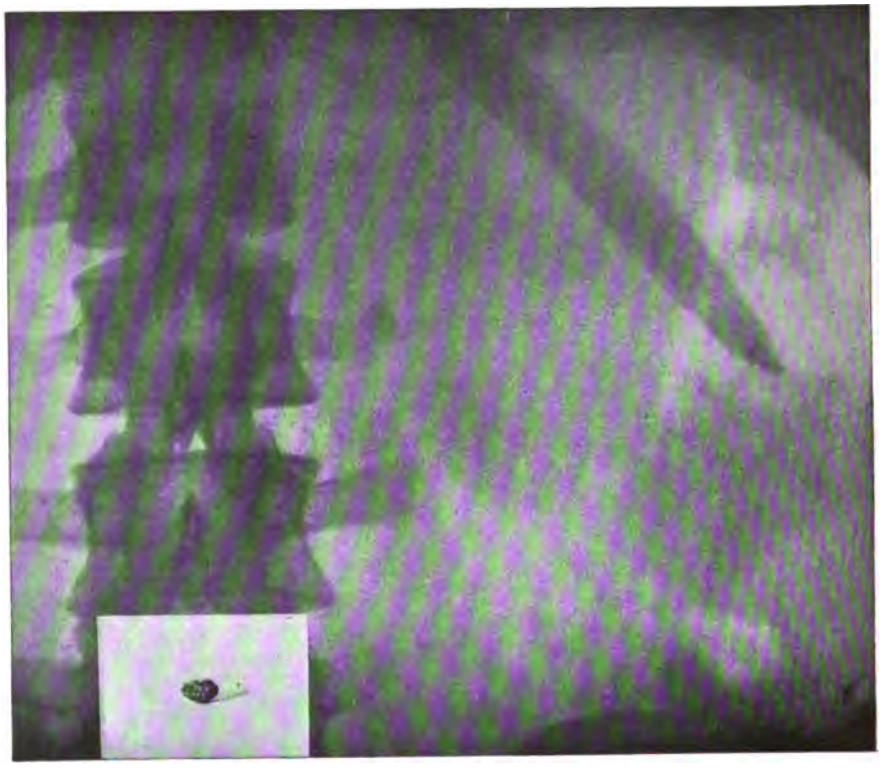

FIG. 4. Renal calculus (calcic oxalate). The calculus is seen just over one of the transverse processes in the beginning of the ureter. A photograph of the calculus after removal is placed over the body of the last vertebra shown in the picture. The outline of the enlarged kidney, four times the normal size, may also be seen.

amount and kind of light given out by the tube employed is known.

Studies with the fluorometer have likewise made it possible to ascertain the direction in which the maximum amount of X-Rays issues from the tube, and the curves of X-Light of different degrees of penetration thus observed

indicate that the X-Rays are composite in character, but this point has more scientific than clinical significance at present.

The room in which the work was carried on, 11 feet by 24 feet, was divided into thirds, the first of which was used

FIG. 5. Shows the method of drawing the outlines on the patient's skin while looking through the fluoroscope. The fluoroscope is held farther away from the patient than is necessary in practice, in order that the pencil which is under it may be shown in the picture. The observer usually stands on the patient's right, but in order to show the method of examination better he is seen standing on the patient's left.

The diaphragm which is placed under the patient's chest in order to obtain a better definition of the outlines does not show in this cut.

for a dressing-room, the second for the examining-room and later also for treating patients, and the third for the apparatus and as a dark room for the development of photographs. Radiographs were made and developed in this portion of this small room for two years. In order to have the static machines dry it was necessary to keep them warm, and

therefore at certain seasons of the year the temperature of the room ranged between 95 and 100. All the work was done by Dr. Williams.

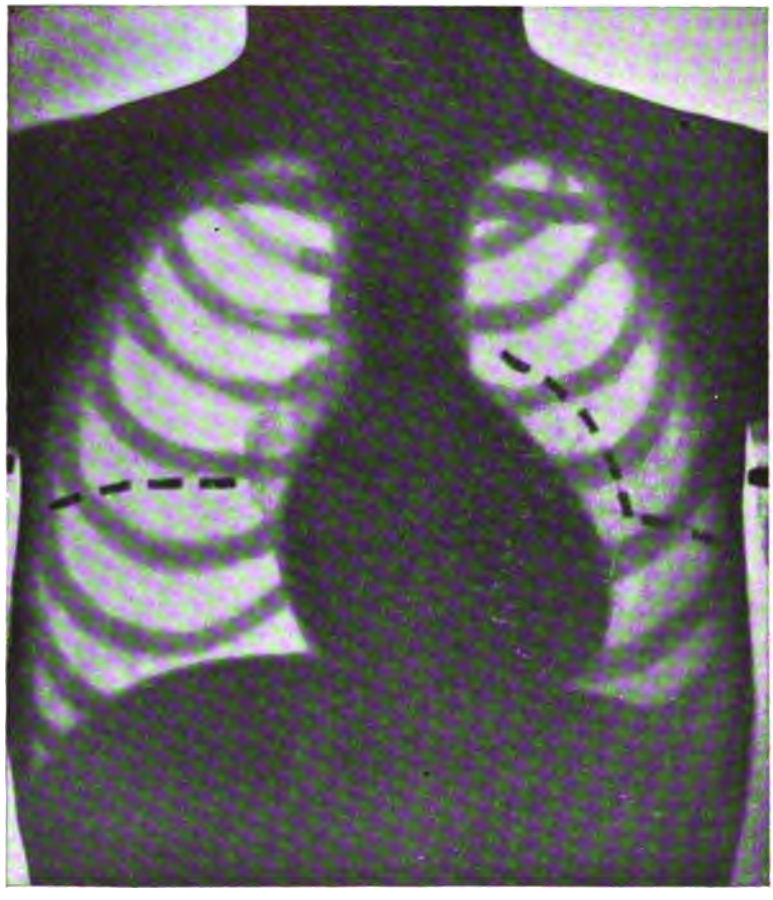

FIG. 6. Diagram of full inspiration during health. The broken lines show the position of the diaphragm and heart in expiration, but the diagram does not indicate that during this time the light area is narrower. The level of the nipples is indicated by the dark lines at the sides of the cut and near the axillæ. The target of the vacuum tube would be placed under the median line, where it is crossed by a line joining the nipples, to obtain such a picture.

As time went on it became obvious that the services of a photographer were needed to take the increasing number of radiographs, and in the summer of 1898 Mr. E. E. Fewkes, who had had twelve years' experience as a photographer,

was appointed X-Ray photographer for the Hospital. This appointment was a fortunate one, as Mr. Fewkes had not only a knowledge of photographic work, but also marked mechanical ability, which has been of great assistance in providing the department with new appliances. About two

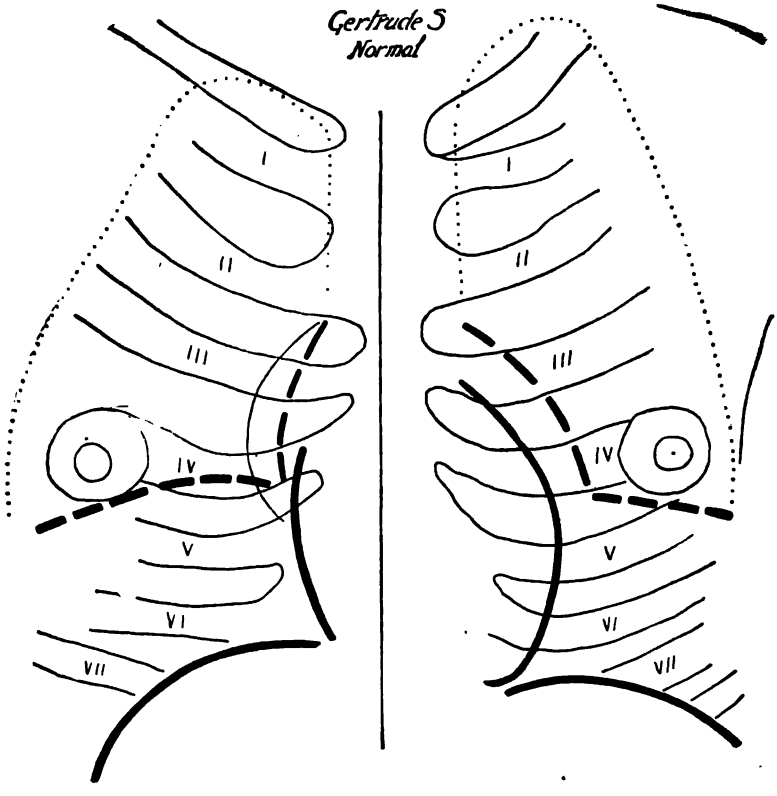

FIG. 7. Gertrude S., 25 years old. X-Ray outlines of normal chest. (One-third life size.) These outlines, including those of the ribs and clavicles, are reduced photographically from the tracing made of the outlines drawn on the front of the patient's thorax. The full lines, with the exception of the outlines of the bones, indicate the position of the parts in deep inspiration; the broken lines in expiration; the dotted line shows about the limit of the bright pulmonary area.

The ribs on the back are not shown, as they would confuse the picture.

The target of the vacuum tube was placed under the point where the line joining the nipples was crossed by the median line.

years ago Mr. Fewkes devised a smaller static machine, which seems to be nearly as efficient as the larger one above mentioned. In 1903 an assistant to Mr. Fewkes was appointed, as the photographic part of the X-Ray work had increased still further.

At the end of 1899 and the beginning of 1900 patients were successfully treated for superficial new growths without causing the slightest irritation, and although other physicians published an account of such cases prior to this, their treatment was carried to the point of causing a burn, and the statement was made by some at least that a burn was necessary. The production of a burn did not prove that the X-Rays were the active agent, for it is well known that cauterization will temporarily help many of these cases, but

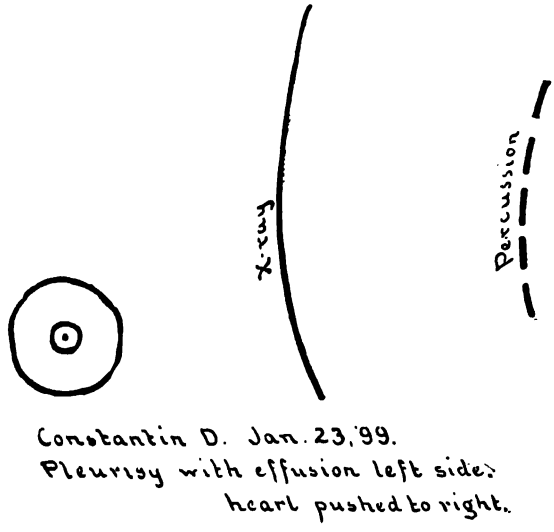

FIG. 8. Constantin D. Cut shows the difference between the right border of the heart as determined by the X-Rays and by percussion.

to demonstrate that superficial new growths will heal without irritation proved that the X-Rays were unquestionably the active agent. This proof was first obtained at this Hospital, so far as I am aware.

In 1902 Dr. S. W. Ellsworth, who had been a house officer at the Hospital and had seen an unusual amount of X-Ray work during his service, began to assist in carrying out the therapeutic use of the X-Rays and still does this work most efficiently.

In 1905 the X-Ray work of the Hospital was transferred from the small room in which it had been carried on for

about eight years to the basement of Ward A, where more convenient arrangements were made for its reception. Two static machines were purchased by the Hospital, and one of the largest static machines in existence, which had been

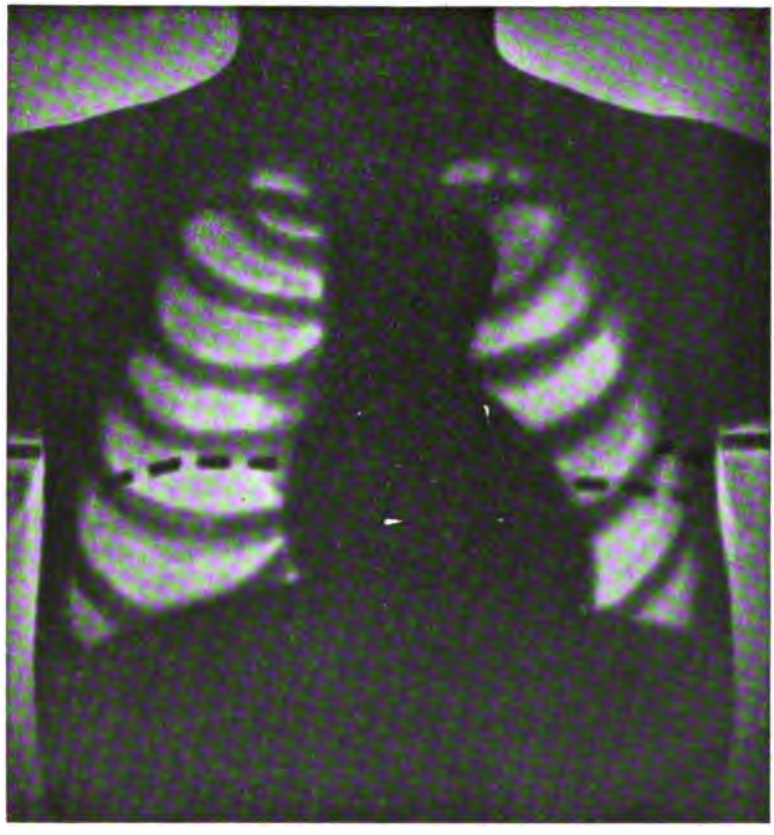

FIG. 9. Diagram of an aneurism of the descending aorta. Full inspiration. The aneurism would usually be higher in the chest than is shown in this diagram. A dilatation of the ascending arch of the aorta would cast a shadow on the right side of the sternum. Broken lines show position of diaphragm in expiration. The heavy lines under the axillæ indicate the level of the nipples.

designed and used by Dr. William Rollins of Boston, was also set up. Miss Elizabeth Cheney of Boston made the Hospital a generous gift of a coil and other X-Ray apparatus designed by Dr. Rollins.

In 1905, also, the X-Ray department was officially established by the trustees and was organized as follows: Physi-

cian for the X-Ray department, assistant physician for the X-Ray department, and assistant to the physician for the X-Ray department. These positions are filled respectively by Dr. Francis H. Williams, Dr. S. W. Ellsworth and Dr. Z. B. Adams, with Mr. E. E. Fewkes as X-Ray photographer and Mr. F. J. Gorbell as his assistant. The official establishment of the X-Ray department will make it possible to do the necessary work more easily and efficiently, and will assist in accumulating systematic records which should prove to be of service in advancing our knowledge of the work possible by means of the X-Rays and in promoting a still further

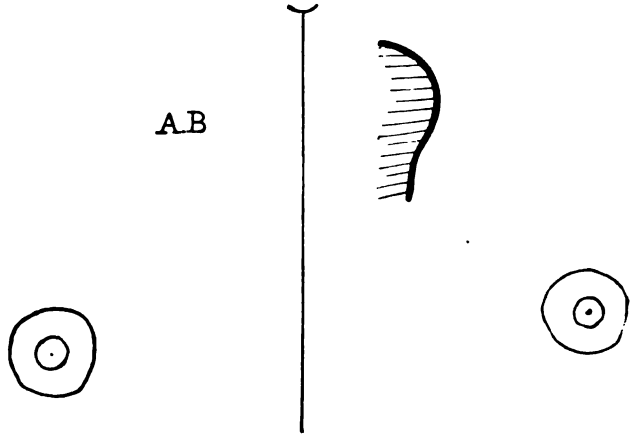

FIG. 10. Case 10. A. B. Cut of X-Ray tracing. Aneurism of descending portion of aortic arch, recognized only by X-Ray examination. Full line partially enclosing shaded area indicates aneurism.

recognition of the importance of X-Ray work in medical and surgical diagnosis and in the treatment of many diseases.

The first outcome of the X-Ray work done at the Hospital has of course been the service rendered the patients. This has been followed by the publication of a number of medical papers,* and in 1901 by a work entitled "The Roentgen Rays in Medicine and Surgery," three editions of which have been published by the Macmillan Company; "The X-Rays in Medicine," System of Medicine (Allbutt and Rolleston), 1905, I., 473–523, etc.

*A list of papers by members of the staff in which the X-Ray work has borne a part is given at the end of this article.

It is not improbable that the work done at this Hospital has also been of assistance to other institutions and practitioners, as visits have been made to this department by medical men from all parts of this country and from some foreign coun-

FIG. 11. Diagram of pneumohydrothorax. Left side. Sitting position. Level line of fluid seen in left chest. Heart displaced to right. Retracted left lung not indicated; it would make a slight shadow in upper portion of left chest. If the patient is examined lying on his back, with the tube below him, the whole of the diseased side is dark, as the fluid flows over it. If the patient were gently shaken the splashing of the fluid could be observed with the fluorescent screen.

tries, who have found here methods and appliances that were instructive to them.

CLINICAL WORK.

A short account of the ways in which the X-Rays are serviceable will indicate the breadth of the work.

Surgical Work. One of the first uses of the X-Rays was the location of foreign bodies, such as bullets, needles, etc. The simple method devised by Dr. Williams * in April, 1896, for locating such bodies as may be seen in the fluoroscope,

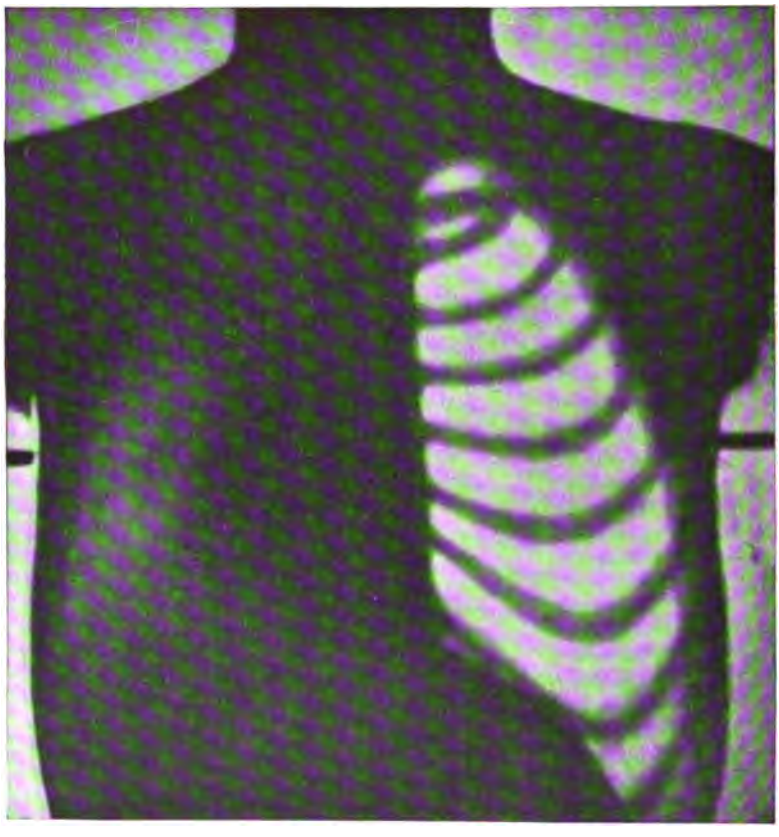

FIG. 12. Diagram of pneumothorax on left side, and tuberculosis on right side. (The diagram is too dark at the right apex.) Left side brighter than normal and bright area more extensive. Diaphragm low down in chest; little or no movement. Organs on left side displaced to right. Heavy lines under axillæ indicate level of nipples.

has come into more and general use as a practical and accurate method well adapted to the needs of the surgeon. The radiograph is also of great service, as shown by Fig. 1, page 319.

Fig. 1.† shows a piece of steel embedded in the arm.

* Described in Boston Med. and Surg. Jour., 1899, CXL., 304.

† Many of the cuts are taken from "The Roentgen Rays in Medicine and Surgery," by permission of the Macmillan Company.

Two examinations for this foreign body failed of result, and it was not found until a radiograph was taken.

The more exact knowledge of the conditions present in cases of fracture and disease of the bones which can be ob-

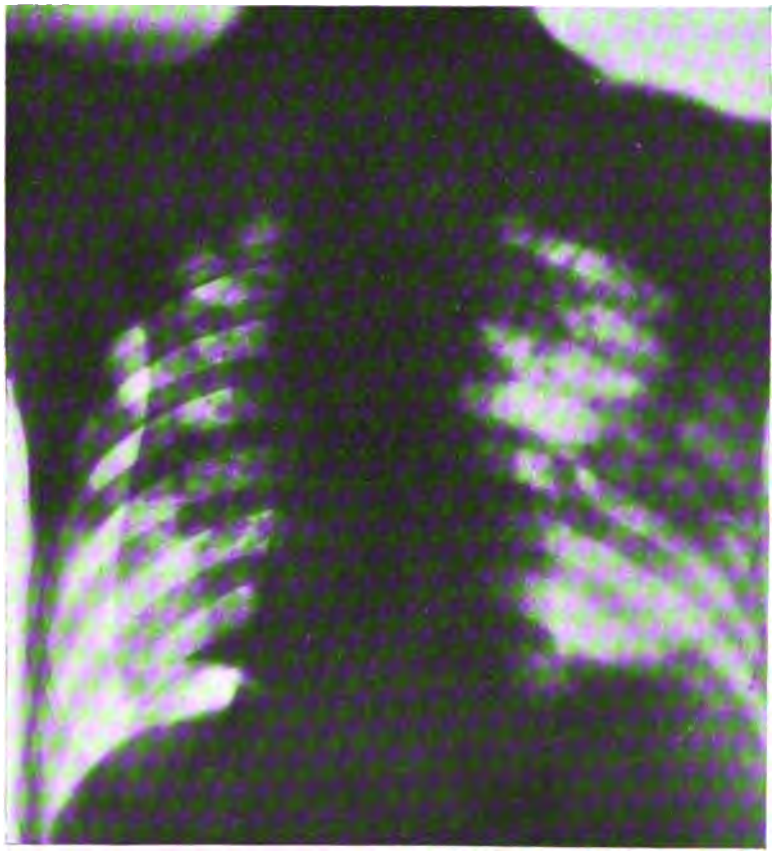

FIG. 13. Radiograph of a patient with pulmonary tuberculosis and pneumothorax. The mottling of the pulmonary areas, the result of the tuberculosis, may be plainly seen; the outline of the partially collapsed lung, caused by the pneumothorax, is clearly indicated.

tained by radiographs is now availed of by the surgical staff almost as a matter of routine. (Fig. 3, page 321.) Certain fractures, such as those of the scaphoid bone, are clearly seen by means of the X-Rays, but by other methods would be difficult of recognition. Fig. 2, page 320, shows a fracture which is apt to be overlooked by the ordinary methods, but which is easily seen by the X Rays.

The diagnosis of renal calculi by means of the X-Rays, which was first demonstrated by Dr. Macintyre of Glasgow, as well as that of ureteral and vesical calculi, has been made at this Hospital for some years with satisfactory results.

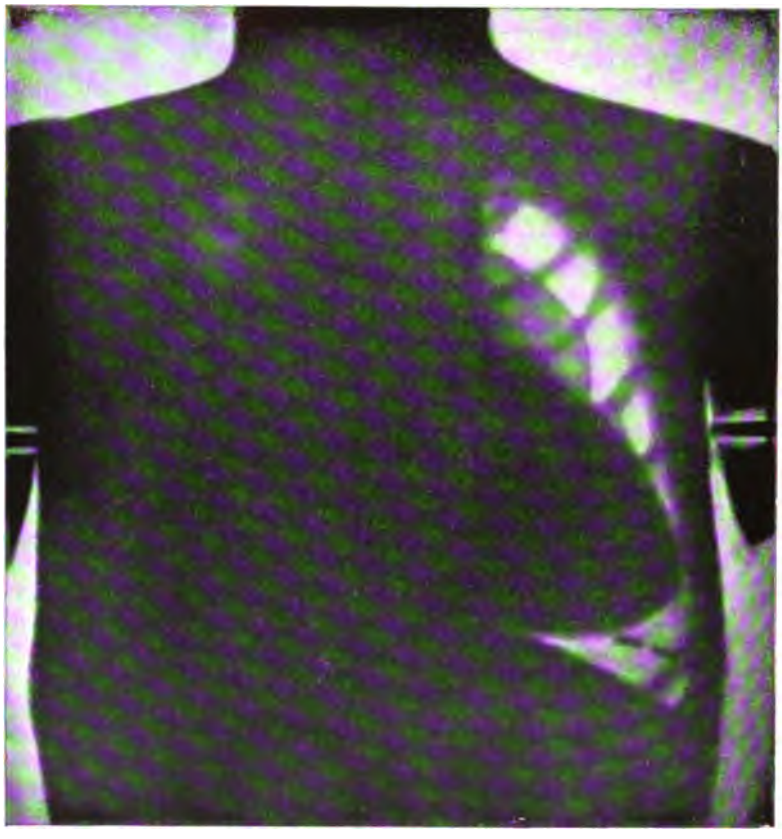

FIG. 14. Diagram of pleurisy, with large effusion; inspiration. Broken lines show position of diaphragm in expiration.

Right side darkened throughout by presence of fluid. Heart pressed to left by fluid and action of left lung interfered with. After four litres had been drawn from the right side, the excursion of the diaphragm on the left side became much greater and was higher in the thorax.

The method employed here is believed to include the good points of those used by others and to have some special advantages of its own. Fig. 4, page 322, illustrates the appearances seen in a case of renal calculus in a patient of Dr. Nichols. The outline of the enlarged kidney may be

seen in the radiograph, as well as the calculus. The radiograph also showed that the stone was in the beginning of the ureter; these appearances were confirmed by the operation. The patient was a stout woman.

Name Andrew J. K. *Age* 47 *Date* April 12. 1897.
Address *Occupation* *Vol.* 421 *Page* 82.
Diagnosis

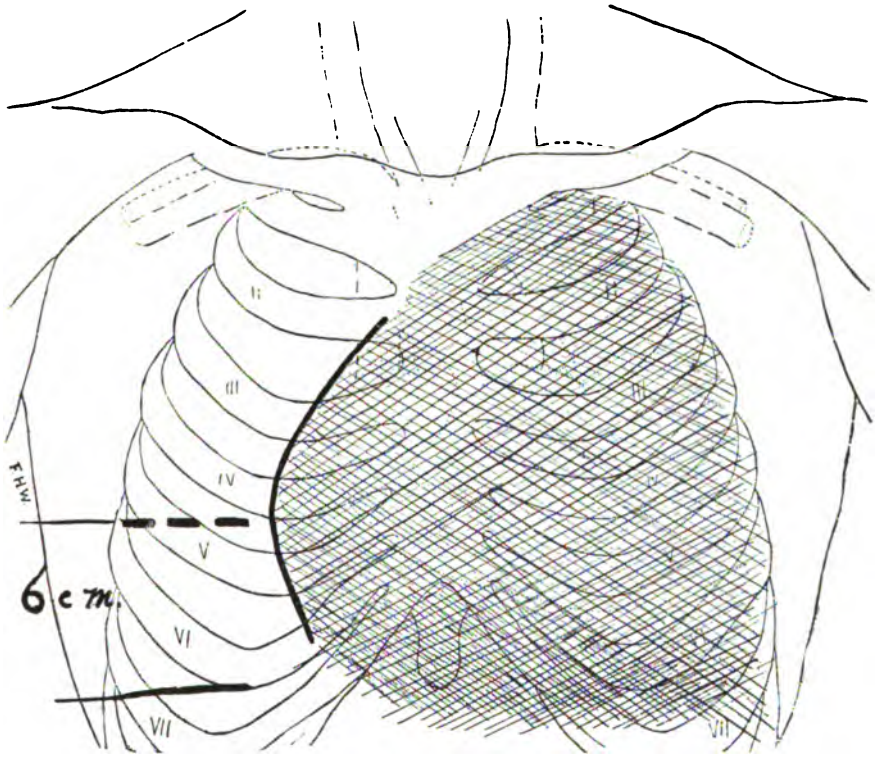

FIG. 15. Andrew J. K. April 12, 1897. First X-Ray examination with screen. Pleurisy with effusion; much displacement of heart.

Some of the earliest tests for determining the location and size of the stomach by means of the X-Rays were made at this Hospital, Dr. W. B. Cannon assisting in some of them. This was done by administering a considerable dose of subnitrate of bismuth and obtaining the outline of the stomach by the shadow the bismuth cast on the fluorescent screen.

The changing outlines of the stomach during digestion can thus be watched by means of the fluoroscope.

The recognition of organs or conditions in the abdomen obtained by inflating the intestines with air or of taking

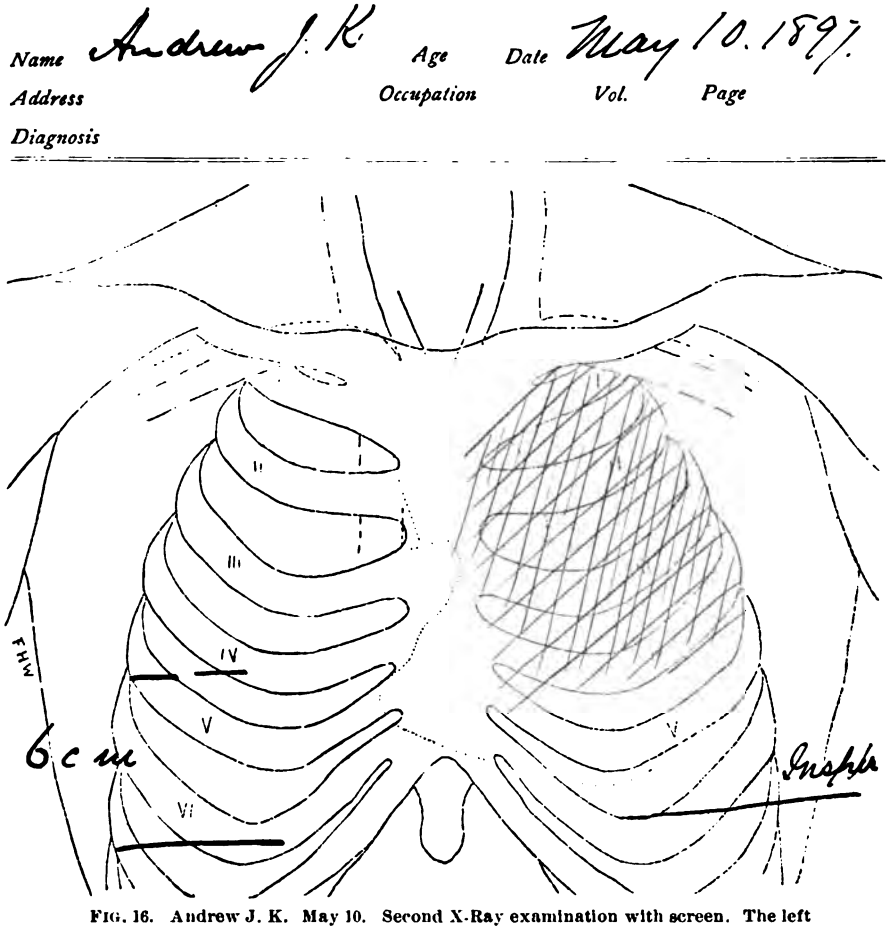

FIG. 16. Andrew J. K. May 10. Second X-Ray examination with screen. The left side is now nearly or quite free from fluid, as the outline of the diaphragm is seen in full inspiration. From the apex downwards this side is increased in density from tuberculosis. (Cut one-third life size.)

advantage of the fact that the lower gut was filled with gas was an early feature of the X-Ray work at the Hospital.

Medical Work. Chest Examinations. I think it may be fairly stated that the studies carried on in the X-Ray room at the Boston City Hospital have resulted in developing a sim-

ple clinical method for the examination of diseases of the chest; a method which shows the conditions of the various organs in the thorax in their relation to each other, which permits of careful study of any special part of the thorax,

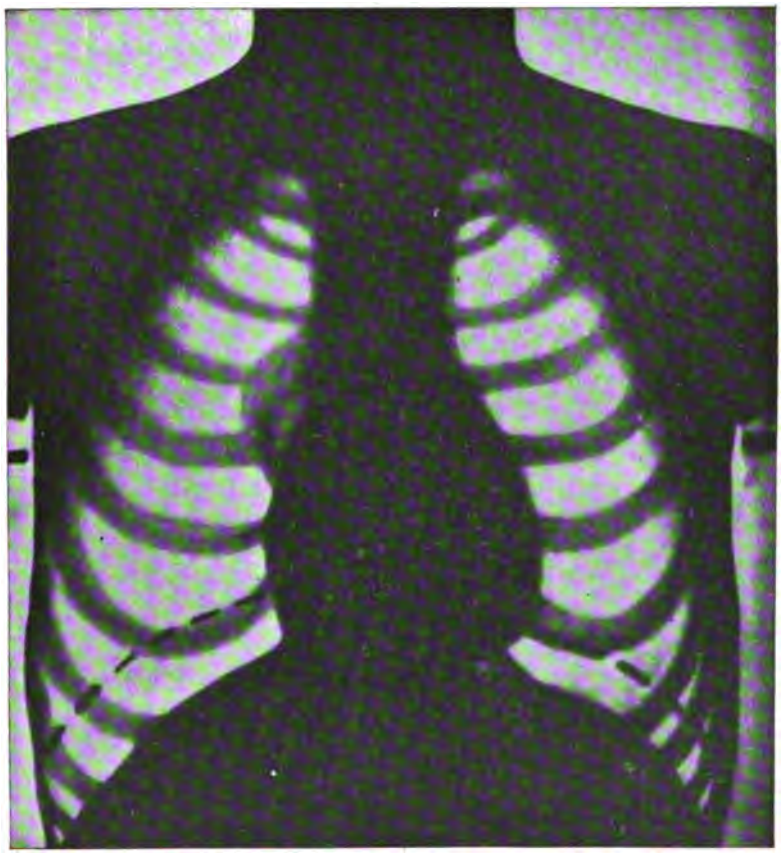

FIG. 17. Diagram of emphysema of both lungs in full inspiration. Broken lines show position of diaphragm in expiration. Nipple level indicated by heavy lines under axillæ.

Lungs brighter and long axis of heart more vertical than normal; excursion of diaphragm shorter than normal, and low down in the thorax.

and which enables the physician to compare accurately appearances seen in the chest at different examinations made at longer or shorter intervals. This method has the advantage of requiring comparatively little apparatus, and has all the accuracy a clinical method needs. The main points of

this method are, first, the proper distance and angle of the vacuum tube from the photographic plate or fluorescent screen; the shadows may be misleading if this point is not borne in mind. Second, recording the position of the tube

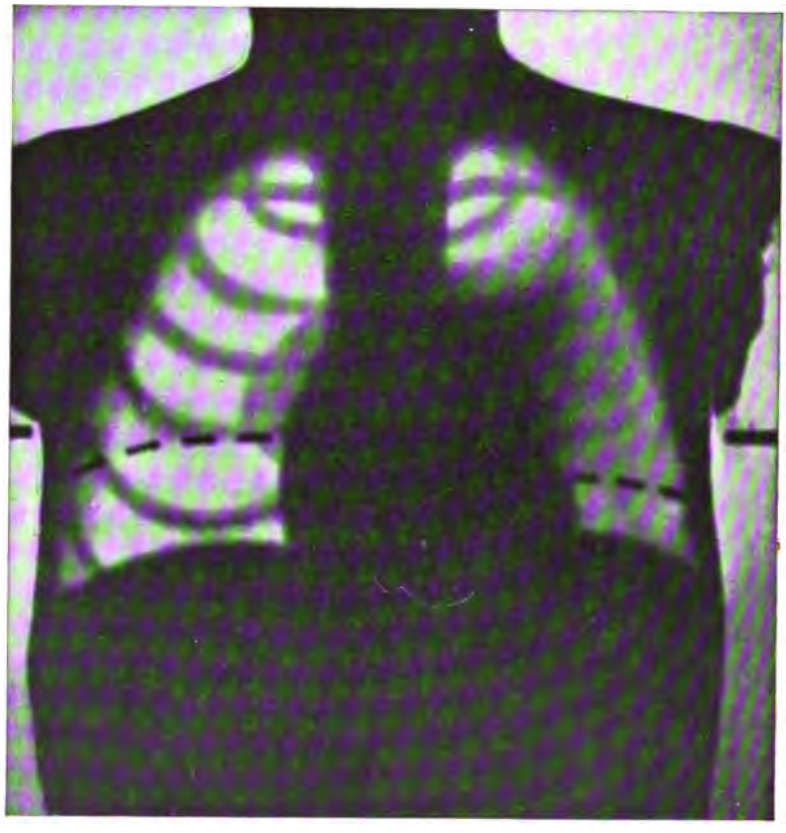

FIG. 18. Diagram of pneumonia. Seventeenth day of disease. No physical signs on or after this day.

Dark area and restricted movement of the diaphragm on the left side; the movement is also less than normal on the right side. The dark area diminished gradually, and the excursion of the diaphragm on both sides increased from week to week. There were still X-Ray signs on the thirty-second day.

with regard to the patient, in order that the appearances seen at one examination may be compared with those observed at another; and its uniform position. The washer shown in Fig. 2, page 320, illustrates the former point, as it marks the spot opposite which the tube was placed when this radio-

graph was taken. The appearances seen in the chest are traced on tracing paper and filed for reference.

Many of the cuts in this article indicate the great assistance which may be had from the X-Rays in recognizing the condi-

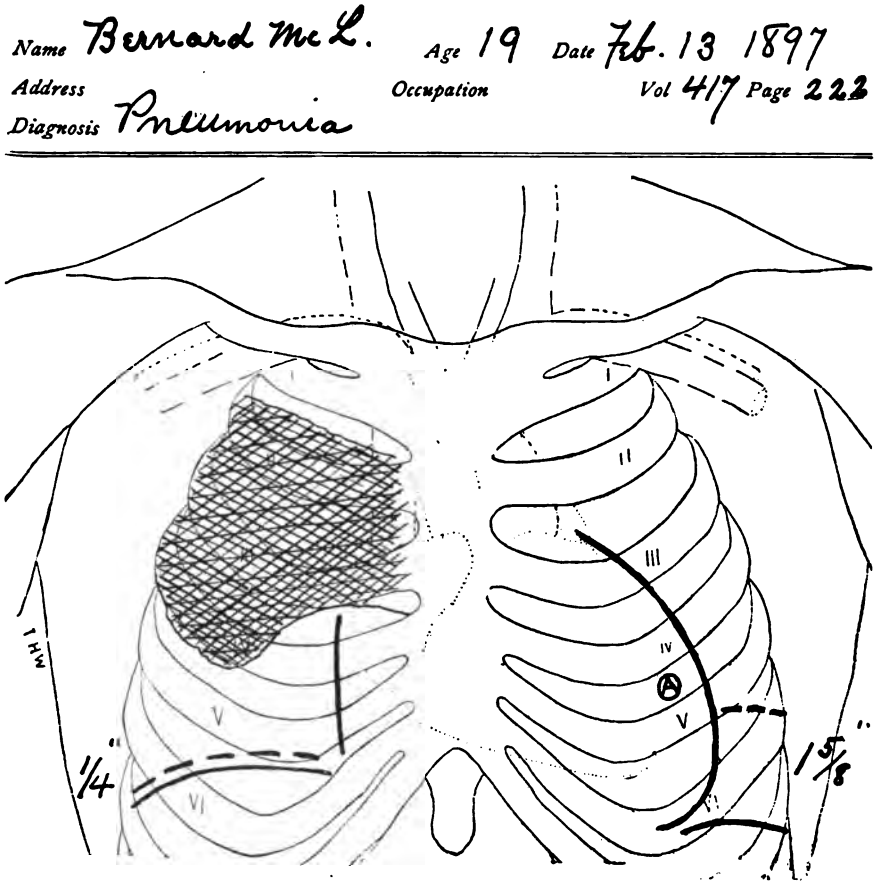

FIG. 19. Bernard McL. Pneumonia. X-Ray examination with screen; seventh day of disease. Outline of pneumonia sharply defined. Lung clear at apex. Physical examination did not show this fact. Movement of diaphragm on right side, 0.6 centimeters; on left side, 4 centimeters. (One-third life size.)

tions present in diseases of the heart and lungs. It may be fairly stated that in a patient with thoracic disease where the diagnosis is doubtful or obscure, the physical examination is not complete until an X-Ray examination has been made. In some cases the diagnosis can be made at an

earlier stage of the disease by means of the X-Rays than by any other method.

Fig. 5, page 323, shows the method of drawing the outlines on the skin while looking through the fluoroscope. The radio-

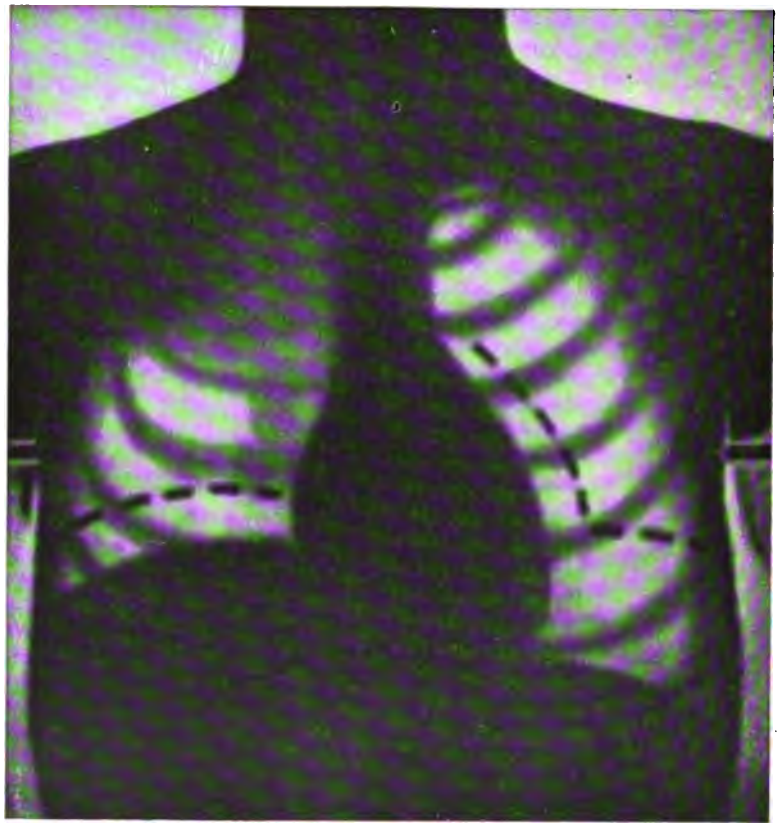

FIG. 20. Diagram of pulmonary tuberculosis. Right side.
Right apex darker and excursion of diaphragm shorter than normal on right side.
In this diagram the apex is darker, and the excursion of the diaphragm is more restricted than in the very early stage of the disease, partly for purposes of illustration, and in the case of the apex also, because it is difficult to get a slight amount of shadow reproduced in the half-tone.

graph is also useful in examining the chest, but the fluoroscope is of more value, as the organs can be seen in motion.

Fig. 6, page 324, is a diagram of the chest in full inspiration during health.

Fig. 7, page 325, is an X-Ray tracing of the normal chest.

The value of the X-Rays in the diagnosis of chest diseases is exemplified by the following. Careful comparison between the size and position of the heart, as determined by auscultation and percussion on the one hand and X-Ray examinations on the other, have shown conclusively that when the heart is

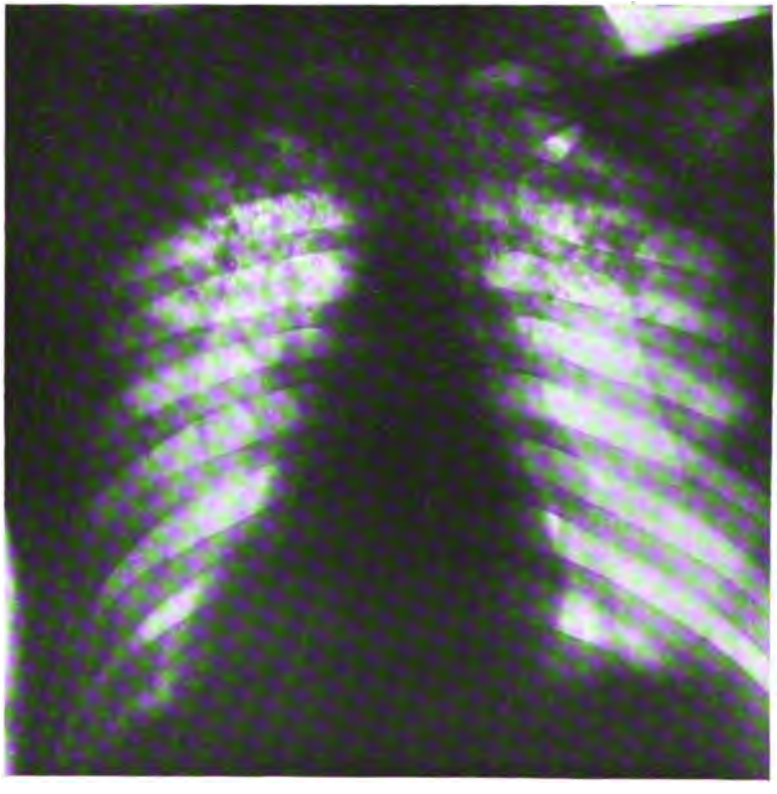

FIG. 21. Radiograph of a case of pulmonary tuberculosis, in which both apices are affected, as shown by the darkened areas in this portion of the lungs. The mottling seen below the apices indicates that the lungs are also affected here.

normal in size and position its borders may usually be accurately recognized by auscultation and percussion, but that when its position or size is abnormal the outlines obtained by the older methods are frequently not in accordance with the more definite, accurate and complete outlines obtained by the fluoroscopic examination. Fig. 8, page 326, illustrates this point. Moreover, the fluoroscope permits the study of the

movements of the heart in two ways; its own movements — systole and diastole — and the character of its movement during deep inspiration. The importance of accurate information in regard to the size and position of the heart when diseased needs no emphasis.

An X-Ray examination has been shown to be of great service for recognizing aneurisms in the thorax in an early stage (see Figs. 9 and 10, pages 327 and 328), or what is of very great importance, as a means of excluding a diagnosis of aneurism which is not infrequently made on other grounds. The presence of new growths or glands or other abnormal conditions, such as diverticula of the œsophagus, may also be studied advantageously by this method.

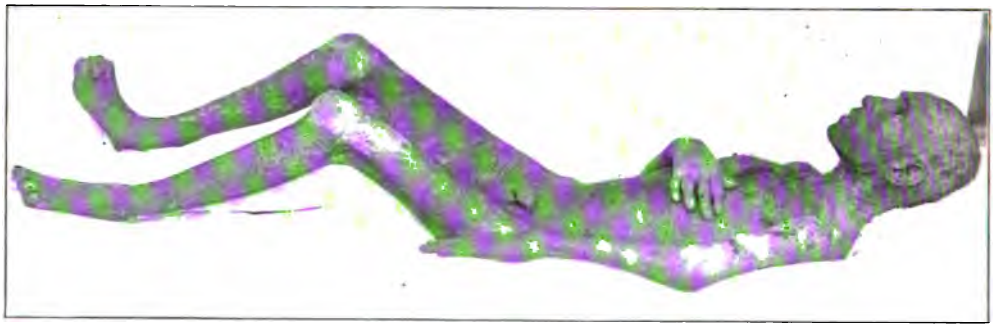

FIG. 12. Dermatitis herpetiformis. At the beginning of X-Ray treatment.

An X-Ray examination offers a new and very advantageous means of making a diagnosis in abscess of the lung, and of locating its position with far greater accuracy in some cases than has hitherto been possible. New growths in the lung, their site and development, may also be easily studied.

The ability to demonstrate the absence or probable presence of liquid in the pleural cavity, is another of the ways in which the X-Rays are of service. The diagnosis of pneumohydrothorax or pneumopyothorax may now be made with more certainty than hitherto, and I think the records of the Hospital will show that since X-Ray examinations have been made this disease has been more frequently recognized in the Hospital than formerly. This method of chest examination has also contributed to the recognition of the fact that pneu-

mothorax may be a more acutely dangerous condition for a patient than when the chest contains a large pleuritic effusion. Fig. 11, page 329, shows the appearances seen in the chest in pneumohydrothorax.

Fig. 12, page 330, shows the appearances seen in the chest in pneumothorax.

Fig. 14, page 332, shows the appearances seen in the chest in pleurisy with large effusion.

Fig. 15, page 333, is taken from an X-Ray tracing of the appearances seen in the chest in a case of pleurisy with effusion.

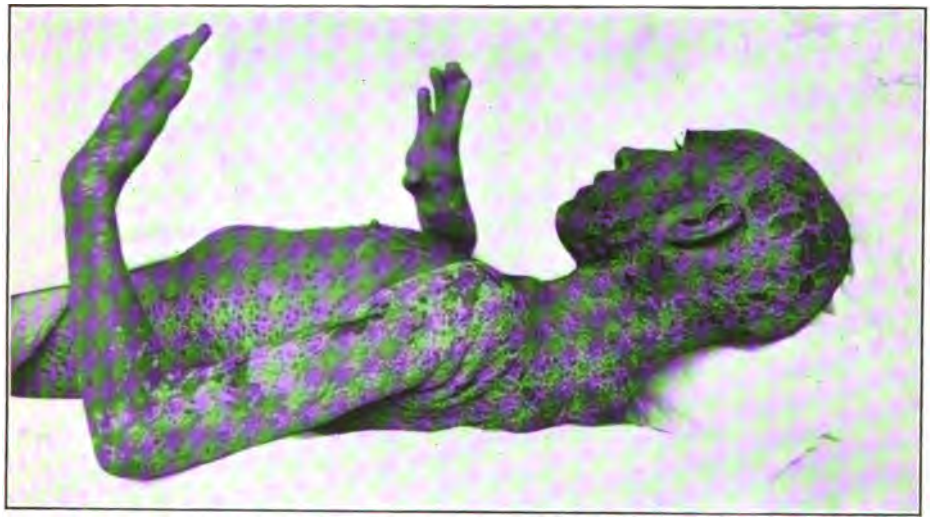

FIG. 23. Dermatitis herpetiformis. At the beginning of X-Ray treatment.

Fig. 16, page 334, is taken from an X-Ray tracing of the same patient a month later. The pleurisy had improved; the shadow at the apex of the lung was due to tuberculosis.

Emphysema of the lungs is a disease not infrequently overlooked in young persons, but the X-Rays can demonstrate its presence beyond cavil. Fig. 17, page 335, shows the appearances seen in the chest in emphysema.

It is sometimes difficult to make a differential diagnosis between pneumonia and some other diseases; for instance, during an epidemic of cerebro-spinal meningitis, some cases of pneumonia may be mistaken for meningitis, or fractured

ribs may be mistaken for pneumonia, but by means of an X-Ray examination the physician can differentiate between the two. Further, and what is not infrequently of importance, the practitioner may observe a central pneumonia by means of the X-Rays which gave no physical signs. Fig. 18, page 336, shows the appearances seen in the chest in pneumonia on the seventeenth day, when there were no physical signs.

Fig. 19, page 337, is taken from an X-Ray tracing showing the condition seen in a case of pneumonia on the seventh day of the disease.

The X-Rays render a special service in pulmonary tuberculosis. The need of its early recognition is a matter much in the minds of laymen and the medical profession, and some of the methods for recognizing this disease in a more curable stage by the aid of the X-Rays were introduced at this Hospital, and are finding acceptance in other countries as the work of this Hospital. The restricted excursion of the diaphragm and the heart displaced towards the affected side are among the earliest signs of this disease of the lungs, and they were pointed out by Dr. Williams. Fig. 20, page 338, shows the appearances seen in the chest in pulmonary tuberculosis. See Fig. 6, page 324, for normal chest.

This method of examination, in tuberculosis as in aneurism, also at times affords an opportunity for excluding a diagnosis of the disease which has been made on other grounds. It has sometimes happened that patients who were about to be sent to another climate or to some sanatorium, have been shown by X-Ray examination to be free from this disease, and this opinion has been confirmed in some cases by years of subsequent oversight. This fact has suggested that some at least of the apparent cures of pulmonary tuberculosis at sanatoriums may include patients who have never had the disease. A few years ago I was interested to analyze the report of cases treated at a sanatorium for tuberculosis, and it was suggestive to find that after dividing the patients into two groups, those in which the diagnosis had been made by finding the bacilli, and those in which this important confirmatory test had not been made, by far the greater

portion of the cures were in the group in which the bacilli had not been found.

The value to the community of a method for making an early diagnosis in pulmonary tuberculosis scarcely needs emphasis, as all will recognize that many patients can afford to leave home for some months, a sufficient length of time in the early stage of the disease, and would not forfeit their careers in so doing, who could not leave their business for two years, for example, which would be necessary during

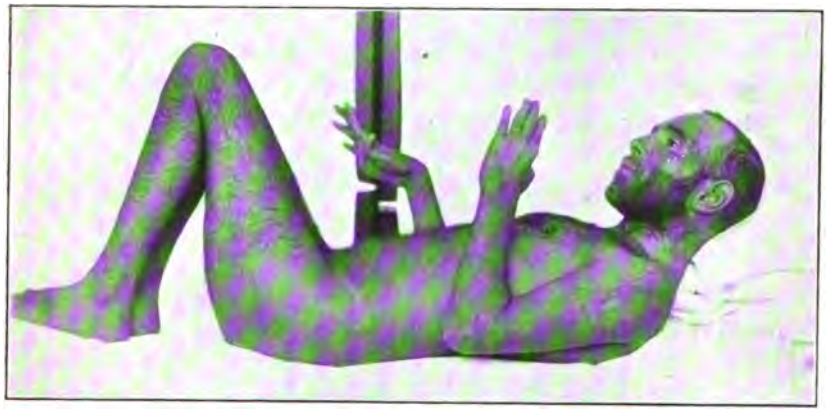

FIG. 24. Dermatitis herpetiformis. After treatment by the X-Rays. (Compare with Figs. 22 and 23.)

the later stage of the disease, a time also when the chance of recovery would be far less.

Therapeutic Use of X-Rays. The use of the X-Rays as a therapeutic agent is more recent than their use as a means for diagnosis, and this part of the work has been largely under the excellent care of Dr. S. W. Ellsworth. In certain diseases of the skin treated at this Hospital they have proved to be very useful, notably in some cases of psoriasis and of eczema. In diseases of the glands, especially tubercular glands and also tubercular sinuses, they have proved efficient in many cases. In some diseases of the glandular system, such as leukemia, the use of the X-Rays has been followed by seemingly good results; unfortunately these results do not appear to be permanent, and it is a question whether this

method can ever be more than palliative in this disease; but if used it should always be with great care.

Dermatitis Herpetiformis. One case of this disease treated by the X-Rays at the hospital is of such interest that it is given in some detail.

William W., 26 years of age. Well developed and nourished. Entered the Boston City Hospital March 11, 1903. Three weeks before entrance several joints became painful and tender, and one week before a rash appeared over the trunk. The patient grew worse until May, then improved somewhat in May and June, but became worse again in July and August. Suffered much in September and October. In November he was absolutely helpless, had to be fed, and could not even turn over a newspaper. He had been given various kinds of external and internal treatment after consultation with the dermatologists at the Hospital.

The patient came under the care of Dr. Francis H. Williams in October, 1903, and on November 4 he began to use the X-Rays on small areas and omitted all other treatment. These areas improved, and therefore during November Dr. Williams had every part of the skin exposed to the X-Rays for five minutes, the patient having nine general exposures in all during this month. He was carried to the X-Ray room on a stretcher, and in order to avoid the necessity of turning him the tube was placed above, beside or below him as the surface to be treated required. At the end of November his general condition had decidedly improved; there was less pain and tenderness in his legs, and he was better able to move in his bed without suffering; many papules had disappeared without reaching the vesicular stage; the skin was less congested. Improvement continued until the latter part of December, but was followed by a relapse coincident with a diminution in the number of exposures to the X-Rays during this month (only six were given in December). In January, 1904, nine X-Ray treatments were given, and improvement was gradual and continued under the use of the X-Rays during February and March. The patient left the Hospital in April, 1904. The skin was then soft, smooth and free from all pustules and

crusts. He had a total of forty-four treatments, every portion of the skin having been exposed to the X-Rays five minutes at each treatment.

Figs. 22 and 23, pages 340 and 341, show his condition after he had improved somewhat under exposure to the

FIG. 25. Dermatitis herpetiformis. After treatment by the X-Rays. (Compare with Figs. 22 and 23.)

X-Rays. (He suffered too much to be photographed before X-Ray treatment was begun.) Figs. 24 and 25, pages 343 and 345, indicate his condition after the X-Ray treatment had been fully carried out.

In April, 1906, the patient presented himself at the Hospital to show how well he was. He had been free from pain; his skin was in perfect condition; he had become rather stout, and was walking 3½ miles a day for exercise.

The use of the X-Rays as a means of treating certain new growths has a special interest for us, because cases of these diseases treated at the Hospital are among the earliest in

FIG. 26. G. F., fifty-one years of age. Clinical diagnosis, epithelioma of nose. Duration, two years. Before treatment by the X-Rays.

which the X-Rays were so employed, and, so far as I am aware, were the earliest in which it was demonstrated, as already mentioned, that the use of the X-Rays was followed by healing without in any way acting as a cautery; that is to say, that th[illegible] use of the X-Rays, without producing any bur[illegible] superficial new growths to heal.

Figs. 26 and 27, pages 346 and 347, show a case of rodent ulcer of the nose, before and after treatment by the X-Rays.

FIG. 27. G. F. Has been well for more than three years.

That the X-Rays have value as an analgesic is beyond question; not only do they diminish the amount of pain which accompanies some new growths, but they may also reduce pain from other causes — for example, the pain of

neuralgia and that which sometimes accompanies acute pleurisy or pneumonia.

Though a very large number of patients have been examined at this Hospital, it has thus far escaped the unfortunate experience of any serious burn, and this is a demonstration of the fact that the X-Rays may be used on a large scale without harm, if suitable precautions are taken.

Radium.

This account of the X-Ray department should not be closed without a reference at least to the use of radium as a therapeutic agent, its action is so similar to that of the X-Rays. Dr. William Rollins was the first person to appreciate that radium salts would probably be useful in the treatment of certain diseases. The earliest specimen used was weak and the results obtained were not conclusive, but in 1903 Dr. Williams obtained in Europe some pure radium bromide, and has used it since that time at the Hospital, with excellent results, in small superficial new growths and skin diseases such as eczema and psoriasis. Radium is not of service in diagnosis.

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XVIII.

OPHTHALMIC DEPARTMENT.

By O. F. Wadsworth, M.D.

The service of the Ophthalmic Department began with the opening of the Hospital, June 1, 1864, Dr. Henry W. Williams having been appointed ophthalmic surgeon December 29, 1863.

Two small rooms and a waiting-room in the basement of the first medical pavilion were occupied for the out-patient service, which was held then, as ever since, three days in the week, Mondays, Wednesdays and Fridays. House patients were cared for in basement wards adjoining the out-patient rooms, and private patients, for the first few years, in the second story of the central (administration) building.

The rapid growth of the service in the early years of its existence showed that it was needed and appreciated by the community. During the first seven months, up to the date of the first annual report, the number of house patients was 37; of out-patients 371. The second year after this, during 1867, the number of house patients was 106, while during 1868 the number of out-patients reached 1,918. And these numbers were afterward only once equalled till 1898 and 1899 respectively. For the last five years the average number of house patients has been 106; of out-patients 2,033.

Meanwhile, the character of the out-patient service has in some respects materially changed. In the early years the ophthalmoscope was used but little, and the correction of refractive errors, which now demands a large part of the time of the ophthalmic surgeon, was given little attention. The difference in the importance placed upon errors of refraction, then and now, is well illustrated by the fact that it was more than six months after the service was opened before

the need of a case of test glasses was brought to the notice of the trustees.

On the opening of the first out-patient building, in 1868, much more commodious quarters in it were assigned to the out-patient service. The house patients remained in the basement of the first medical pavilion till the opening of a new medical pavilion in 1876; then they were transferred to the new building and the former basement wards abandoned. In 1890 the out-patient service was removed to the then new out-patient building (lodge), and again in 1904 to its present quarters in the surgical out-patient building, each change being a decided improvement.

The service was conducted by Dr. Williams alone till the end of 1870; then Dr. O. F. Wadsworth was also appointed ophthalmic surgeon and the service was divided. April, 1882, an assistant to the ophthalmic surgeons was appointed. April, 1885, the ophthalmic surgeons were made visiting ophthalmic surgeons. January, 1892, the staff was changed to one visiting ophthalmic surgeon, two ophthalmic surgeons to out-patients and two assistants to the ophthalmic surgeons. June, 1896, a third ophthalmic surgeon to out-patients was appointed. April, 1898, the title of the ophthalmic surgeons to out-patients was changed to ophthalmic surgeons, and December, 1900, a third assistant to the ophthalmic surgeons was appointed.

STAFF OF THE OPHTHALMIC DEPARTMENT, 1863–1906.

Henry Willard Williams. Ophthalmic Surgeon, December, 1863, to April, 1885; Visiting Ophthalmic Surgeon, April, 1885, to May, 1891; Consulting Physician and Surgeon, December, 1892, to June, 1895.

Oliver Fairfield Wadsworth. Associate Ophthalmic Surgeon, November, 1870, to April, 1871; Ophthalmic Surgeon, April, 1871, to April, 1885; Visiting Ophthalmic Surgeon, April, 1885.

Charles Herbert Williams. Assistant to the Ophthalmic Surgeons, April, 1882, to July, 1883.

Myles Standish. Assistant to the Ophthalmic Surgeons, February, 1884, to February, 1888.

Henry Whitman Kilburn. Assistant to the Ophthalmic Surgeons, June, 1888, to September, 1891.

Lewis Seaver Dixon. Assistant to the Ophthalmic Surgeons, May, 1891, to January, 1892; Ophthalmic Surgeon to out-patients, January, 1892, to November, 1893.

Edwin Everett Jack. Ophthalmic Surgeon to out-patients, January, 1892, to April, 1898; Ophthalmic Surgeon, April, 1898, to October, 1901.

Walter Brackett Lancaster. Assistant to the Ophthalmic Surgeons, January, 1892, to December, 1893; Ophthalmic Surgeon to out-patients, December, 1893, to April, 1898; Ophthalmic Surgeon, April, 1898, to October, 1901.

Francis Ingersoll Proctor. Assistant to the Ophthalmic Surgeons, January, 1892, to April, 1892.

John Collins Bossidy. Assistant to the Ophthalmic Surgeons, December, 1893, to June, 1896; Ophthalmic Surgeon to out-patients, June, 1896, to April, 1898; Ophthalmic Surgeon, April, 1898.

Alexander Quackenboss. Assistant to the Ophthalmic Surgeons, December, 1893, to July, 1896.

William Joseph Daly. Assistant to the Ophthalmic Surgeons, November, 1896, to October, 1901.

Charles Fred Moulton. Assistant to the Ophthalmic Surgeons, November, 1897, to April, 1901; Assistant to the Ophthalmic Surgeons, December, 1902.

Allen Greenwood. Assistant to the Ophthalmic Surgeons, November, 1900, to December, 1901; Ophthalmic Surgeon, December, 1901.

Edward Russell Williams. Assistant to the Ophthalmic Surgeons, December, 1900, to December, 1901; Ophthalmic Surgeon, December, 1901.

Robert Gardner Loring. Assistant to the Ophthalmic Surgeons, April, 1902.

Peter Hunter Thompson. Assistant to the Ophthalmic Surgeons, December, 1902.

XIX.

EAR DEPARTMENT.

By Dr. J. Orne Green.

The department for diseases of the ear was established in January, 1869, and Dr. J. Orne Green was appointed Physician to Out-patients for Diseases of the Ear. From that date a regular clinic was held three times a week in the out-patient building. In 1882 the title of the office was changed to Surgeon to Out-patients for Diseases of the Ear, as this more accurately expressed the nature of the work. In June, 1888, a regular visiting service was established in the Hospital with an assignment of three beds in each of Wards C and D, for the more serious cases, and one house officer was assigned to the combined ophthalmic and aural services. At this time Dr. Green was appointed Visiting Aural Surgeon. The regular out-patient clinic was continued as before by assistants. In 1901 Dr. Green resigned as Visiting Aural Surgeon, and Dr. George A. Leland was appointed to the position. At the same date Dr. Green was made Advisory Surgeon of the Hospital.

XX.

SKIN DEPARTMENT.

By Dr. George F. Harding.

The department for treatment of skin diseases among out-patients, under the charge of Dr. Damon, was first opened in April, 1868. Over 500 patients have been treated in this department, and 1,500 visits made during the present year. Patients are seen daily, Sundays excepted, at 11 o'clock A.M., and clinical instruction and lectures are given to medical students and physicians every Tuesday, commencing at the same hour.

Dr. H. F. Damon was appointed admitting physician May 28, 1864–65; resigned in 1866, and was reappointed in 1867; was appointed physician to skin out-patient department in 1868; reappointed annually until 1877, when he was asked to resign.

Dr. Edward Wigglesworth was appointed physician for diseases of skin to out-patients in 1877. See Trustees' Record, O. S., Volume 3, page 77. Reappointed annually until 1894; then he was appointed physician to diseases of the skin; was reappointed in 1895; died in 1895.

Dr. George H. Tilden was assistant for diseases of skin 1881–84; appointed physician to diseases of the skin for out-patients in 1884, and held appointment regularly until 1892; then had a year's leave of absence, and was reappointed in 1893; resigned very soon after reappointment, Volume 3, page 76.

Dr. James S. Howe was assistant in 1887–93, Volume 2, page 26; appointed physician for diseases of the skin in 1898.

Dr. George F. Harding was appointed acting physician in 1893, 1894, 1895, Volume 3, page 91; appointed regular physician in 1896.

Dr. Harvey P. Towle was appointed executive assistant in 1898. One month later appointed assistant for diseases of the skin, Volume 3, page 87; also in that year approved for special service in the contagious department, Volume 3, page 97; assistant until 1895; then one year's leave of absence for study abroad; reappointed assistant in 1896; resigned August 28, 1903.

Dr. C. Morton Smith was appointed assistant to physician for diseases of the skin, June 15, 1904, for six months. See Volume 8, pages 45 and 52. Reappointed for six months, ending July 1, 1905; resigned.

The department for diseases of the skin was established as an out-patient department in April, 1868. Dr. H. F. Damon, then admitting physician, was appointed to take charge, and saw the patients in the admitting room. Patients were seen daily, and during the first year 559 cases were treated. In the following year there were 1,563 new cases, and a lecture room was granted to the department in the out-patient building, one hour a week being devoted to the exhibition of cases.

In 1871 the department obtained a room in the out-patient building for the treatment of patients, the admitting room having been used up to that time for this purpose. Two years later, 1873, the service was cut down to three days a week, accommodation being made for the reception of patients from 9 to 11 o'clock A.M. on Tuesdays, Thursdays and Saturdays. Dr. Damon continued in charge until the end of the year 1877, and during his nine years of service 8,543 new cases were seen.

During the year 1877–78 Dr. Edward Wigglesworth was appointed in Dr. Damon's place, and the days were changed to Mondays, Wednesdays and Fridays. Dr. Wigglesworth continued the service alone until the year 1881–82, when Dr. George H. Tilden was appointed assistant. During this period there were 2,487 new cases seen.

In 1884–85 Dr. Tilden was appointed physician to the department, to serve with Dr. Wigglesworth. The year was divided into alternate services of four months each. This arrangement continued until 1889-90, when Dr. James S. Howe was appointed assistant, and he took the service during the summer months.

In January, 1891, the department changed its quarters to the then new out-patient building. Up to this time, a period of twenty-three years, 19,962 new cases had been seen, the yearly average being about 900.

In 1902 Dr. Tilden was granted a year's leave of absence, and the department was under the charge of Drs. Wigglesworth and Howe. Dr. Tilden resigned in 1894, and Dr. Howe was appointed physician, to fill the vacancy. On account of illness Dr. Howe was unable to attend to his service, so Dr. George F. Harding was appointed acting physician to the department. Owing to the continued illness of Dr. Howe, Dr. Harding served as acting physician until the death of Dr. Wigglesworth in 1896, when he was appointed physician, to take charge with Dr. Howe. Dr. Harvey P. Towle was appointed assistant at this time. The service was now divided into two periods of six months each, Dr. Howe attending from January to July, and Dr. Harding from July to January. This arrangement has continued up to the present time, 1905.

Dr. Towle resigned the position of assistant in 1903, and since that time no regular assistant has been appointed. Dr. C. Morton Smith served as temporary assistant for two terms of six months during the past year, 1904–1905.

In June, 1900, the days were changed to Tuesdays, Thursdays and Saturdays, on account of changes in other departments. The department had temporary quarters in the new out-patient building during reconstruction of the old, but in January, 1905, settled in the present quarters, on the first floor of the old building.

From 1891 to 1895 the annual number of new cases remained about the same as in previous years, but since 1895 there has been a steady increase, the report for 1904–05

showing 2,012 new cases, as against 887 in 1903–04. The total number of new cases seen during the thirty-seven years of the department's existence was 36,824. The total number of visits made to the department during that time would, however, be much larger, as each patient makes at least two or three visits, and some many more than that.

XXI.

THROAT DEPARTMENT.

By Dr. Thomas Amory DeBlois.

The initiative in the formation of the throat department was taken by Dr. Ernest W. Cushing, who, in 1874, urged the trustees to create such a department, but all his efforts were without avail until 1876, when they agreed to the proposition, and in 1877 Dr. Cushing received his appointment, dating from January 1, 1877, as "Laryngoscopist."

On June 29, 1881, Dr. Morton Prince was appointed assistant for diseases of the throat, and he served as such until 1884, when he resigned and received an appointment in the "nervous and renal" department, as it was then termed.

During Dr. Cushing's service one winter, when Dr. F. I. Knight was ill, he gave the course of lectures for the Harvard Medical School and also the clinical instruction at the Boston City Hospital (in diseases of the throat).

In conjunction with the late Dr. Wigglesworth he wrote a paper on Buccal Syphilis from City Hospital cases.

In 1883 Dr. Cushing thought of resigning from the throat department, and Dr. Morton Prince having gone to Europe to perfect himself in diseases of the nervous system, the Board of Trustees authorized Dr. Thomas Amory DeBlois, "Laryngologist" to the Boston Dispensary, to take charge of the clinic during the summer of 1883.

On July 30, 1883, Dr. DeBlois received an appointment as assistant to physicians for diseases of the throat.

On September 17, 1884, Dr. Ernest W. Cushing resigned, and Dr. Morton Prince resigned the same year. Dr. DeBlois was appointed physician for diseases of the throat to outpatients.

On January 7, 1885, Dr. Franklin H. Hooper was appointed physician for diseases of the throat to out-patients, as colleague to Dr. DeBlois.

During this period the work of the throat department was carried on in the small one-story out-patient building at the corner of Concord street and Harrison avenue, occupying two small rooms, on Tuesdays, Thursdays and Saturdays, and alternating with the physicians for diseases of the nervous system.

In 1888 the department moved into the new quarters in the out-patient building at the corner of Springfield street (before it was closed) and Harrison avenue. The entrance gate was also changed to the Springfield street end of the Hospital.

A good compressed air service and galvano cautery with electric engine (both run by a storage battery and gravity plant) were also supplied.

There were two good rooms beside the general waiting room, chairs and tables for the instruction of students, and everything comfortable. The department now alternated with the aural department for out-patients.

On October 22, 1890, Dr. F. H. Hooper resigned.

On December 17, 1890, Dr. John W. Farlow was appointed physician for diseases of the throat to out-patients, in place of Dr. Hooper.

About 1892 the days of service of the throat department were changed to Mondays, Wednesdays and Fridays.

About the same time the gentlemen serving were made physicians for diseases of the throat to the Boston City Hospital (not to out-patients alone).

On April 22, 1885, Dr. George A. Leland was appointed assistant to physicians for diseases of the throat. He continued as such, generally doing service with Dr. DeBlois until April 15, 1902, when he resigned to take charge of the entire aural department.

On November 18, 1897, Dr. Rockwell A. Coffin was appointed assistant to physicians for diseases of the throat.

About 1902 the titles were changed from physicians for diseases of the throat to surgeons for diseases of the throat.

This was only just, for laryngology had long since ceased to be a medical specialty.

On January 13, 1904, Dr. George L. Vogel was appointed assistant to surgeons for diseases of the throat.

In the summer of 1904 the throat department was moved into the new out-patient building or lodge, at the corner of Concord street and Harrison avenue, thus returning to their first location.

The department had their new quarters to themselves, had four rooms and some conveniences not found in the Springfield-street building.

During these twenty-eight years the department has grown very much; some days the attendance has been as high as eighty-seven, and on operating days as many as eighteen ether operations have been done.

In December, 1892, Dr. DeBlois and Dr. Farlow were appointed clinical instructors in laryngology to Harvard Medical School, and since that time the department has been used for clinical instruction by Drs. DeBlois, Farlow and Coffin, who, together with Dr. Vogel, are now serving in the department.

XXII.

DEPARTMENT OF NEUROLOGY.

By Philip Coombs Knapp, M.D.

The first recognition of the specialty of neurology at the Hospital was the appointment of Dr. Webber as "electrician." He had previously been connected with the Hospital as pathologist, and, *ex-officio*, physician to the smallpox department. His chief duties as electrician seem to have been to consult with the visiting staff as to the advisability of giving electricity to patients. This he did in person, and occasionally gave the house officers instructions in its administration in certain cases. He was also occasionally consulted as a neurologist for purposes of neurological diagnosis and treatment.

During the year 1877 an out-patient department for diseases of the nervous system was established, the first recorded case being seen on May 8. Dr. Webber was placed in charge, and the first case was one of rheumatic neuritis. The diagnosis is of some interest, inasmuch as the first series of cases of multiple neuritis with autopsy published in this country were reported some years later by Dr. Webber from his service in the Hospital.

The out-patients were received in the back entry of the old lodge, which was a general thoroughfare for the visiting and out-patient staff, the house physicians, and all the employees who slept in the story above. The equipment, down to 1886, consisted of one faradic battery, which did faithful service until 1904. A small adjoining room was used for examinations, but the department had no instruments for diagnosis. In 1886 a more adequate electrical outfit was established.

In 1877 the two medical services of the Hospital had become overcrowded, and on June 5 Dr. Edes and others of the visiting staff proposed a division of these services.

The next recorded action of the trustees was the election, on March 19, 1878, of Drs. Edes and Webber as visiting physicians for diseases of the nervous system, and to their service might also "be assigned such patients with other diseases as the trustees from time to time may direct." Owing to Dr. Edes' interest in renal diseases these other patients were chiefly cases of this nature, so that the service came to be known as the nervous and renal. The actual establishment of the service, however, considerably antedates this record; for on July 2, 1877, twenty-one patients were admitted to the new service, thirteen of them being transferred from other services. The first case entered was a boy of twelve, with chorea and acute articular rheumatism. He was discharged relieved in twelve days. Wards F and G were devoted chiefly to this service, although it also contributed a large and characteristic contingent to Wards K and L.

In 1882 the visiting physicians requested an addition to their number, and Dr. Denny was promoted to be the third member of the staff. The nervous and renal service was a valuable addition to the Hospital not only on account of the excellent scientific work done by its staff, but also as a training school for young physicians desiring to become alienists or neurologists. When Dr. Edes was appointed Jackson Professor of Clinical Medicine at the Harvard Medical School, in 1884, it was thought desirable to admit a larger number of general medical cases to the service, and when Dr. Webber resigned a proposal was made to change the character of the service, making it simply a third medical service. This was done on December 22, 1886, and the abolition of the service (called by the present neurological staff "the crime of 1886") was a lamentable backward step on the part of the Hospital, and a serious blow to neurology in Boston.

Previously to this, in 1885, the out-patient staff was increased by the appointment of a second physician and an assistant. In 1889 a third physician was added to the out-

patient staff, a second assistant was appointed, and an externe was assigned to the department. In 1890, on the opening of the new medical out-patient building, the department was assigned three commodious rooms on the second floor of that building and given a new electrical outfit, including a static machine and an adequate supply of instruments for diagnostic purposes. With the increased amount of teaching done by the staff at the Harvard and Tufts Medical Schools, the increased number of assistants, externes and patients, and the introduction of massage by volunteers from several of the gymnastic schools in the city, these rooms became quite inadequate, and in June, 1904, the department was assigned one wing containing seven rooms and a large corridor on the ground floor of the new surgical out-patient building. At the same time it was given an elaborate electrical apparatus supplied by the street current, with two tables for galvanism and faradism, a motor for the static apparatus, high frequency, thermo-electric and X-Ray apparatus, and many new instruments for diagnosis. The department has also acquired, largely by gifts from the staff, a small neurological library, a set of neurological wall charts for teaching purposes, and a collection of microscopical preparations of neuro-pathological interest, so that it is now well equipped for out-patient work, and needs only the assignment of beds for cases requiring hospital treatment to make it equal to any other department. A request for such beds was made in 1891, but was not granted. On March 22, 1894, the title of the physicians was changed to "physicians for diseases of the nervous system," dropping the term "out-patient," inasmuch as the physicians were often called in consultation over patients in the wards. On May 5, 1902, the cumbrous title of "assistant to the physicians" was changed to the simpler term "assistant physician."

On March 15, 1899, the senior physician of the department was made a member of the senior staff, so that the department for nervous diseases might have representation at the meetings of the senior staff. On June 8, 1900, the trustees authorized the appointment of temporary assistants in the department for six months, and on April 27, 1904, a

permanent second assistant was authorized and appointed. There are now three physicians, two assistant physicians, one second assistant physician and two externes connected with the department, one physician, one assistant physician, the second assistant physician, with two externes, being constantly in attendance. In addition there are frequently one or more volunteer assistants and one or two masseuses in attendance each day.

Electrician.

Samuel Gilbert Webber, appointed October 17, 1876; promoted March 19, 1878.

Visiting Physicians for Diseases of the Nervous System.

Robert Thaxter Edes, appointed March 19, 1878; resigned July 21, 1886.

Samuel Gilbert Webber, appointed March 19, 1878; resigned August 19, 1885.

James Henry Denny, appointed October 18, 1882; service abolished December 22, 1886.

* Charles Follen Folsom, appointed September 30, 1885; service abolished December 22, 1886.

Physicians for Diseases of the Nervous System to Out-Patients.

Orville Forest Rogers, appointed May 6, 1878; resigned July 2, 1878.

James Henry Denny, appointed November 19, 1878; promoted October 18, 1882.

* Charles Follen Folsom, appointed November 22, 1882; promoted September 30, 1885.

Physicians for Diseases of the Nervous System.

(Appointed as physicians for diseases of the nervous system to out-patients; title changed April 18, 1894.)

* Morton Prince, appointed January 13, 1885; still in office.

* Philip Coombs Knapp, appointed January 20, 1886; still in office.

William Norton Bullard, appointed April 17, 1889; still in office.

Assistant Physicians for Diseases of the Nervous System.

(Assistants to the physicians for diseases of the nervous system to out-patients; title changed, April 18, 1894, to assistants to the physicians for diseases of the nervous system; title changed to assistant physicians, etc., May 5, 1902.)

* Philip Coombs Knapp, appointed April 22, 1885; promoted January 20, 1886.

William Norton Bullard, appointed April 21, 1886; promoted April 17, 1889.

* Elliot Gray Brackett, appointed April 19, 1889; resigned June 27, 1893.

John Amory Jeffries, appointed April 19, 1889; died March 26, 1892.

Chauncey Rea Burr, appointed January 5, 1893; resigned November 20, 1893.

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* House officer, Boston City Hospital.

* John Jenks Thomas, appointed October 18, 1893; still in office.
Joseph William Courtney, appointed July 18, 1894; still in office.

Second Assistant Physician for Diseases of the Nervous System.
* Marsena Parker Smithwick, appointed April 27, 1904; still in office.

On June 8, 1900, the trustees allowed the appointment of assistant physicians for a term not exceeding six months. Under that rule the following assistants have been appointed:

* Lawrence Watson Strong, appointed March 5, 1900.
* Lawrence Watson Strong, reappointed July 25, 1900.
* William Robie Patten Emerson, appointed January 17, 1901.
* Marsena Parker Smithwick, appointed October 29, 1902.
Frederick Robertson Sims, appointed March 16, 1904.

The following list shows the other positions held at the Hospital by different members of the neurological staff:

Samuel Gilbert Webber, pathologist and, *ex-officio*, physician to the smallpox department, appointed February 16, 1869; resigned April 11, 1871.

Robert Thaxter Edes, visiting physician, appointed June 11, 1872; transferred to service for diseases of the nervous system, March 28, 1878.

James Henry Denny, visiting physician, appointed on the abolition of the service for diseases of the nervous system, December 22, 1886; resigned August 22, 1888.

Charles Follen Folsom, physician to out-patients, appointed December 21, 1881; transferred to out-patient department for diseases of the nervous system, November 22, 1882. Visiting physician, appointed on the abolition of the service for diseases of the nervous system, December 22, 1886; resigned December 28, 1898. Consulting physician and surgeon, appointed December 13, 1900; still in office.

Morton Prince, assistant for diseases of the throat, appointed June 29, 1881; resigned May 23, 1883.

Lawrence Watson Strong, second assistant in pathology, appointed August 25, 1897; resigned August 10, 1898.

William Parker Robie Emerson, assistant to the medical out-patient department for six months, appointed May 5, 1902; reappointed Octber 29, 1902.

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* House officer, Boston City Hospital.

XXIII.

THE BOSTON CITY HOSPITAL CLINICAL MEETING.

By John Bapst Blake, M.D.

The Boston City Hospital Clinical Club has passed through many phases, and has changed its name with frequency and facility. Indeed, at the hour of this writing, it is no longer the Clinical Club, but, by virtue of a recent vote of the triumvirate who at present direct its actions, it is called by the name of its principal function, the Boston City Hospital Clinical Meeting. It lives, as it were, only in its own good works, and may be said almost not to exist outside them. Its spirit and purposes are, nevertheless, unchanged — its scope is enlarged.

Like many other things, now important parts of the Hospital as a whole, the Clinical Club did not arise suddenly, but was born from parents of humble birth. For some years before its first formal meeting, on December 13, 1894, Dr. Abner Post had been in the habit of meeting the house staff informally and discussing with them interesting cases which were in the Hospital wards at the time. Previous members of the house staff, who had studied abroad, were sometimes asked to talk at these gatherings, and, in this way, the foundations were laid for the more formal meetings, which were, and are, clinical in character; they have never limited themselves solely to clinical cases, but have utilized pathology, bacteriology, X-Ray work and all other branches relating to the entire subject of hospital life, which might be interesting or instructive to the visiting and the house staffs.

Dr. George B. Shattuck called the first regular meeting to order (1894), and Dr. Augustus S. Knight was the first secretary. The name, "Boston City Hospital Medical So-

ciety," stands at the head of the records of this meeting, and continues so to do during the meetings of the following years, until December 20, 1900, when the name Boston City Hospital Clinical Club first appears. This, in turn, as before noted, gave place in 1905 to the present title.

At an early date, indeed immediately upon his appointment as pathologist to the Hospital in 1892, Dr. W. T. Councilman interested himself in the informal gatherings of the house officers. With Dr. Post he endeavored to make it possible for each one of the house staff to see and hear about the most interesting cases in all of the hospital wards. Medical cases were thus brought to the notice of the surgical internes, surgical cases demonstrated to the medical house staff and pathological specimens to both. It began in a modest way in an endeavor to give greater opportunities for observation and information to the house officers, and to utilize more than had previously been the case the wonderful wealth of chemical material constantly passing through the hospital wards — an amount of material so great that the individual house officer, intent upon the never ending and never endable routine of work, was apt to view only as a bewildering, and at times confusing, panorama, passing all too rapidly before his tired eyes. To Dr. Post is due the credit of inaugurating these meetings, and he more than any other single individual gave both time and thought to them during the first decade of their existence.

From this has developed the present custom, which is to have six monthly meetings during the winter, devoted to all the departments of the Hospital, but divided mainly into equal groups of medical, surgical and pathological. In former years it was the custom to show the patients first, then to describe them a little more in detail and at greater length, and finally to have a demonstration of interesting specimens, chiefly pathological. The meetings are usually held in the Hospital Library, though at times, especially when lantern slides are shown, the surgical amphitheatre is utilized. The attendance is large, free discussion and questioning is encouraged, and every effort is made to facilitate explanation and examination of the cases. Until 1903 cases shown at

the meetings were not published in the Medical Journal, but since that time publications have been more or less regular.

From the beginning the meetings have been successful and have more than repaid the time and thought expended upon them. Similar meetings have been established at the Massachusetts Hospital, and will probably continue to be a recognized part of the ever-extending influence of the modern hospital.

In 1901 the management of the Clinical Club was put in the hands of a committee of three, Drs. Sears, Mallory and Lund. In that year it was decided to change the name of the "Club" into "Boston City Hospital Clinical Meetings." This change was made in order that the members of the staff and the graduates might feel more free to invite other members of the profession to attend the meetings, by modifying the idea of exclusiveness conveyed by the word "Club." In March, 1904, an arrangement was made with the Boston Medical and Surgical Journal whereby a brief report of the cases presented at each meeting are published. This serves to collect and preserve a mass of valuable hospital material hitherto buried and lost in the Hospital records. The secretaries have been D. A. S. Knight, J. B. Blake and H. L. R. Crandon.

XXIV.

THE ALUMNI ASSOCIATION OF THE BOSTON CITY HOSPITAL.

By JOHN BAPST BLAKE, M.D.

TWO societies have sprung into existence in the last fifteen years, and have already made themselves definite integral parts of the Hospital as a whole. These are the Alumni Association and the Clinical Meetings already described. They differ absolutely from one another in origin, ends and methods, but they are alike in that they aid materially in helping to make the Hospital still better than it was, in adding to it new elements of interest and strength, and in increasing very materially the *esprit de corps* of the graduates. One is a sign of social, the other of scientific and educational advance. Membership in the one is formal, in the other it is a privilege of present or previous relation to the Hospital. Much could be written of each, but it has seemed best to limit the description to an outline, a simple record of beginnings, growth, scope and present conditions.

"On the afternoon of June 13, 1888, at the close of the Massachusetts Medical Society banquet, at the Hotel Vendome, at the invitation of Dr. R. A. Kingman, there was a gathering of such past house officers of the Boston City Hospital as could at the moment be found in the hotel. There were present Drs. Geo. W. Gay, F. W. Draper, J. A. Gordon, Chas. B. Belt, E. O. Otis, Herbert L. Burrell, G. I. Cutler, R. A. Kingman, Geo. E. Thompson, S. H. Ayer, James B. Field, Wallace C. Keith, and as a representative of the staff, Dr. David W. Cheever.

"The meeting was called to order by Dr. Geo. W. Gay, and organized by the election of Dr. Cheever as chairman and Dr. Kingman as secretary. These appointments were subse-

quently made permanent by general consent, the officers to hold their position until the more complete organization of the association."

These paragraphs are taken from the original minutes of this earliest meeting, which was called by Dr. R. A. Kingman, and to whom belongs the credit of forming the organization. In its early days the organization was called "The Boston City Hospital Club," and its objects were "to pro-

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mote the social and professional relations of the members, and to advance the interests of the Hospital."

It is to be noted that at its foundation this was essentially a social body, a club whose members must be graduates of the Hospital, but which did not in any way pledge itself to elect all house officers, past and future, to membership. The idea of an alumni association developed as years went by. The club originally limited its honorary membership to five, and had no associate membership at all. The earliest

honorary members were the first president, Dr. Cheever, and Dr. John G. Blake.

The club voted to hold annual meetings, usually dinners, in June, on the day before the banquet of the Massachusetts Medical Society. In this way it was hoped to secure the attendance of men from distant parts of the State, who at other times would be less likely to come to Boston. This was done until 1894, when the date of the dinner was changed to February (1895), and since then this custom has continued.

In 1899 the "Hospital Day" was inaugurated; the actual Hospital plant, buildings, grounds, etc., was increasing so fast that it seemed desirable to bring the older graduates back again to the scenes of their medical childhood. The members were therefore invited to inspect the newer buildings, make visits to the wards, witness operations and take lunch in the library, offered by the courtesy of the trustees. The Alumni dinner is held on the evening of this day, and the combination has been so successful that it has been repeated each year and is now a regular and recognized part of the annual meeting.

In this same year the members voted to change the name from the Boston City Hospital Club to the Almuni Association of the Boston City Hospital, and incidentally with the change of name gave up certain traditions which were more or less closely associated with the idea of a club. All house officers are now eligible for admission if they have served one year in the Hospital. Their names are considered by the nominating committee and are presented to the members at the annual meeting, and are always favorably acted upon by a voice vote. For practical purposes, favorable consideration by the nominating committee is equivalent to election.

In 1902, after several years of consideration, the association took another wise step in admitting to associate membership those gentlemen of the visiting staff not graduates of the Hospital. This was the final abandonment of the "club" idea, and the establishment of the association upon the broadest basis. It was obvious that the men who were doing active work in the Hospital day by day had fully as much vital interest in the institution as those who graduated from it and then saw it only occasionally in after years. It

is eminently proper that these men should be given at least associate membership in the association; this in no way infringed upon the rights and privileges of the Hospital graduates, and it overcomes the somewhat awkward situation of omitting from these pleasant reunions many active and well known members of the staff who were unlucky enough not to have been City Hospital house officers. Their adopted mother now gives them all the privileges of foster children.

These annual dinners, of which there have been thirteen, are invariably interesting and enjoyable occasions. Among the after-dinner speakers is usually a member of the Board of Trustees, a member of the Staff of the Massachusetts General Hospital, often a prominent lawyer, occasionally a clergyman, a soldier, a statesman. Music and songs are parts of the programme, and even verses, strictly professional, have been known to creep in, and have been received with the courtesy for which the physician after dinner is proverbial. Graduates of the early years of the Hospital come not infrequently from distant States, while those in and about Boston come to the Hospital in the forenoon and make a half holiday of the occasion.

It may not be entirely without interest to some of the readers to mention the fact that the first suggestion of a History of the City Hospital was made by Dr. Gay, at the meeting of this club held at the Copley Square Hotel in June, 1893. The close of the fourth decade of the Hospital's existence would seem to be a fitting time to carry out that suggestion, and the friends of the institution have good reason to feel grateful to the trustees and alumni for the present volume.

A list of the graduates of the Boston City Hospital for forty years is appended.

THE ALUMNI OF THE BOSTON CITY HOSPITAL, 1864–1904.

1864.

John Dole, died, Amherst, 1872.
Clarence J. Blake, Boston.
Michael F. Gavin, South Boston.
David F. Lincoln, Boston.
Edward G. Loring, died, New York, 1888.

1865.

Frederic I. Knight, Boston.
Frederic R. Sturgis, New York.
Alfred B. Atherton, Fredericton, N. B.
Richard M. Ingalls, died, East Boston, 1877.

J. W. Dooley.
George H. Powers, San Francisco, Cal.

1866.

James F. A. Adams, Pittsfield.
Charles P. Kemp, died, Rugby, Tenn., 1892.
James B. Brewster, Plymouth.
Lucius F. C. Garvin, Londsdale, Lincoln, R. I.
Oliver F. Wadsworth, Boston.

1867.

Reginald H. Fitz, Boston.
William E. Boardman, Boston.
George W. Gay, Boston.
Leverett D. Gunter, died, Chelsea, 1888.
Rufus L. Wilder, died, 1888.
George F. Jelly, Boston.

1868.

Orlando W. Doe, died, Boston, 1890.
Francis W. Goss, Roxbury.
Henry F. Borden, Brockton.
Frank W. Draper, Boston.
John H. McCollom, Boston.
George B. Shattuck, Boston.
George E. Hatton, died, Dedham, 1878.

1869.

Charles F. Folsom, Boston.
Charles B. Shute, died, Malden, 1888.
William J. Clark, Milford.
George B. Stevens, Roxbury.
Charles B. Brigham, died, San Francisco, 1903.
Norman P. Quint, West Medway.
Alexander Proudfoot, Chicago.
Frank W. McPherson, Hampton, N. B.

1870.

John W. Spooner, Hingham.
John A. Gordon, Quincy.
Charles B. Belt, died, South Boston, 1898.
William P. Bolles, Roxbury.
Benjamin J. Handy, Fall River.
Lewis S. Dixon, Boston.
Patrick F. Gavin, South Boston.

1871.

Clifton E. Wing, Jamaica Plain.
William C. Holyoke, died, Boston, 1897.
Wallace W. Lovejoy, Palmyra, N. Y.
Charles A. Lovejoy, Lynn.
G. E. Coulthard, Fredericton, N. B.
William H. Baker, Boston.
Henry J. Barnes, Boston.

1872.

J. Frank Perry, Boston.
William P. Hammond, Charlestown.
George W. Clement, Roxbury.
Henry R. Stedman, Boston.
Arthur L. Foster, died, Boston, 1874.
Edward W. Sawyer, died, 1897.
Michael A. Morris, Charlestown.
J. R. Morgan, Providence, R. I.
Francis Atwood, died, St. Paul, Minn., 1882.
John F. Couch, died, Somerville, 1903.

1873.

George W. Porter, Providence.
Edward J. Moors, died, Boston, 1877.
Edwin P. Gerry, Jamaica Plain.
Duncan P. Myshrall, Detroit, Mich.
Richard Harrison, St. John, N. B.
Leander A. Cliff, Boston.
Herbert Warren, Leicester.
Alexander B. Lawrence, died.
George T. Fox, died, Boston, 1877.

1874.

William H. French, Nordhoff, Cal.
John H. Burchmore, North Evanston, Ill.
Phillip A. Lovering, U. S. Navy.
James A. Fleming, died, Boston, 1883.

Justus C. French, Milwaukee, Wis.
Charles H. Williams, Boston.
Bennett S. Lewis, New Haven, Conn.

1875.

George E. Putney, New Paynesville, Minn.
Charles W. Brown, Elmira, N.Y.
Adolphus B. Gunter, died, Charlestown, 1901.
William L. Jackson, Roxbury.
J. Chester Lyman, Minneapolis, Minn.
Arthur B. Morong, Boston.
R. K. Noyes, Boston.
Benedict F. Gorman, died.
Cornelius J. McCormick, Waltham.
Charles E. McGowan, died, Boston, 1887.

1876.

John B. Foley, died, Roxbury, 1882.
J. G. Brigham, died in hospital, 1877.
Charles A. Wheaton, St. Paul, Minn.
John C. Cutter, Worcester.
Edward O. Otis, Boston.

1877.

Chauncey C. Sheldon, Lynn.
Otis H. Marion, Allston.
William D. Robertson, died, Stanstead, Canada, 1883.
George A. Leland, Boston.
Charles P. Bancroft, Concord, N.H.
Samuel E. Fitz, died, Roxbury, 1883.
William T. Souther, Worcester.
Samuel W. French, Milwaukie, Wis.
Henry S. Kilby, North Attleboro.

1878.

John F. Gore, died, 1888.
George T. Tuttle, Waverly.
Samuel B. Woodward, Worcester.
Charles R. Walker, Concord, N.H.
Henry W. Broughton, Jamaica Plain.
Lewis H. Plimpton, Norwood.
William W. Seymour, died, Troy, N.Y., 1904.
Fred W. Whittemore, died, 1897, Cambridgeport.
Morton Prince, Boston.

1879.

Charles W. Haddock, Beverly.
Henry Hun, Albany, N.Y.
Walter H. Holmes, died, Waterbury, Conn., 1898.
George F. Keene, Howard, R.I.
Samuel E. Wyman, died, Cambridge, 1896.
Adam S. M. Chisholm, Bennington, Vt.
Eugene F. Dunbar, died, Roxbury, 1896.
Walter B. Platt, Baltimore, Md.
Herbert L. Burrell, Boston.
George C. Clement, Haverhill.

1880.

Samuel T. Harmon, died, Boston, 1896.
Charles G. Weld, Boston.
John F. Young, South Boston.
Ernest H. Noyes, Newburyport.
Charles A. Dewey, Rochester, N.Y.
William C. Emerson, died, Boston, 1891.
Frederick W. Johnson, Boston.
Charles F. Withington, Boston.
James H. Bullard, Anaheim, Cal.
George H. Bridgman, State Department, Washington, D.C.
Herbert J. Pomroy, died, Philadelphia, 1893.

1881.

William F. Temple, Boston.
William F. Cunningham, died, 1894 (Leamington, Eng.).
Henry S. Squires, Aguascalientes, Mexico.

Edward J. Cutter, died, Leominster, 1900.
Caleb B. Underhill, died, Somerville, 1887.
Charles D. Sawin, Charlestown.
Herbert B. Whitney, Denver, Col.
Charles G. Weston, Minneapolis, Minn.
Rufus A. Kingman, Boston.
Hayward W. Cushing, Boston.
William T. Brown, Norwich, Conn.

1882.

Josiah N. Hall, Denver, Col.
Maurice D. Clark, Haverhill.
Lemuel F. Woodward, Worcester.
Royal Whitman, New York.
Parke W. Hewins, Brookline.
Edward P. Elliot, died, 1897 (Danvers). (?)
Herbert S. Johnson, Malden.
John Trumbull, Valparaiso, Chili.
Henry A. Wood, Waltham.

1883.

Wallace Preble, Cambridge.
Samuel Delano, Boston.
Joseph B. Murphy, Taunton.
David E. Baker, Newtonville.
Phillip C. Knapp, Boston.
George E. Thompson, Boston.
Stephen A. Welch, Providence.
John B. Brainard, Boston.
Clement W. Sparhawk, West Roxbury.
Robert Bell, Medway.

1884.

James B. Field, Lowell.
Silas H. Ayer, Boston.
Eugene Fuller, New York.
Leonard Wood, Washington, D. C.
Wallace C. Keith, Brockton.
Walter L. Munro, Providence.
J. Arthur Gage, Lowell.
George E. Brewer, New York.
Willis Watson, Bass Harbor, Me.
Eugene P. Stone, Washington, D.C. (U. S. Navy.)
George H. Washburn, Boston.

1885.

Robert W. Greenleaf, died, Boston, 1901.
Charles E. Durant, Haverhill.
Robert W. Lovett, Boston.
John C. Munro, Boston.
Francis C. Murphy, Roxbury.
Edward T. Twitchell, Dorchester.
Charles E. Taft, Hartford, Ct.
Oliver H. Howe, Cohasset.
George W. Perkins, Ogden, Utah.
Elliot G. Brackett, Boston.

1886.

Samuel Breck, Boston.
Charles B. Graves, New London, Ct.
George O. Ward, Worcester.
William B. Fiske, died, Cambridge, 1892.
H. Lincoln Chase, Brookline.
Herbert L. Smith, Nashua, N. H.
William H. Prescott, Boston.
John W. Perkins, Kansas City, Mo.
Edward L. Twombly, Boston.

1887.

Charles J. Foote, New Haven, Ct.
Walter E. Paul, Boston.
Cyrus F. Carter, died, Boston, 1893.
William Barnes, Decatur, Ill.
Charles M. Whitney, Boston.
Richard P. Francis, Montclair, N.J.
Percival J. Eaton, Pittsburg, Pa.
Walter L. Burrage, Boston.
John B. Walker, New York.
Paul Thorndike, Boston.

1888.

Reuben Peterson, Jr., Ann Arbor, Mich.
William A. Morrison, Boston.
George A. Webster, Boston.
Nathaniel S. Hunting, Quincy.
Stephen A. Mahoney, Holyoke.
Warren R. Gilman, Worcester.
L. Wadsworth Tuck, died in hospital, 1888.
John A. Horgan, Roxbury.

Frederick S. Bunker, died, Cambridge, Me.
Gilbert N. Jones, Wellesley Hills.

1889.

William E. Fay, Boston.
Charles H. Hare, Boston.
Allen Greenwood, Waltham.
Frank L. Day, Providence.
Horace D. Arnold, Boston.
Leo M. Crafts, Minneapolis, Minn.
John J. Thomas, Boston.
Rufus E. Darrah, Newport, R. I.
Robert A. Wheaton, died, St. Paul, Minn., 1898.
Edgar Garceau, Boston.
George A. Craigin, Boston.

1890.

Frank S. Whittemore, died, Boston, (?) 1897.
Nelson C. Haskell, Amherst.
Hubert G. Wilbur, Fall River.
Edward M. Holden, Boston.
Joel E. Goldthwaite, Boston.
Eugene A. Crockett, Boston.
Augustus S. Knight, New York.
Arthur H. Wentworth, Boston.
Edwin W. Dwight, Boston.
Daniel H. Fuller, Jamaica Plain.
Horace E. Bragdon, East Boston.
Edwin P. Stickney, Arlington.
Richard Frothingham, New York.

1891.

John L. Morse, Boston.
Thomas J. Robinson, Taunton.
James W. Dudley, Bisbee, Arizona.
John B. Blake, Boston.
Will H. Swan, Colorado Springs, Col.
William E. Faulkner, Boston.
John H. Huddleston, New York.
Alexander Quackenboss, Boston.
Benjamin Tenney, Boston.
Harvey P. Towle, Boston.
Lombard C. Jones, Malden.
Edward H. Nichols, Boston.
Elliott Washburne, Taunton.
John L. Ames, Boston.
George A. Leahy, Lowell.

1892.

Henry S. Rowen, Brighton.
Edward G. Bryant, New York.
Carroll E. Edson, Denver, Col.
Walter G. Stebbins, died in hospital, 1893.
Farrington H. Whipple, Boston.
William H. MacDonald, Antigonish, N. S.
Gilman D. Frost, Hanover, N. H.
Herbert C. Emerson, Springfield.
Jay B. Ogden, Boston.
George P. Cogswell, Cambridge.
Walter F. Sawyer, Fitchburg.
Harold G. Gross, Eureka, Cal.
David D. Brough, Boston.
Robert W. Hardon, Chicago.
Horace S. Moran, Roxbury.

1893.

Robert W. Hastings, Brookline.
Robert M. Merrick, Dorchester.
Edward S. Abbot, Waverley (McLean Asylum).
Frank A. Higgins, Boston.
George A. Harlow, Milwaukee, Wis.
Gilman P. Robinson, died, Atlanta, Ga., 1902.
John S. Phelps, Boston.
Samuel E. Courtney, Boston,
Frederic S. DeLue, Boston.
Sydney Y. Wynne, Redlands, Cal.
Arthur B. Duel, New York.
Henry F. R. Watts, South Boston.
Charles M. Smith, Boston.
Charles B. Stevens, Worcester.
Follen Cabot, New York.
Wm. C. Billings, Springfield.
Arthur J. Shaw, Boston.

1894.

John N. Coolidge, Boston.
Philip R. Waughop, Hawaii.
Orville E. Johnson, Winthrop.
Joseph Frame, Rockland.
George L. West, Newton Centre.
Julius Selva, died, 1897.
Edgar M. Holmes, Boston.
Percy D. McLeod, Boston.

Marsena P. Smithwick, Boston.
George B. Henshaw, Cambridge.
Theron H. Carter, died, Boston, 1899.
John Dennett, Jr., Congress, Arizona.
Dudley Carleton, Springfield.
Theodore C. Erb, Boston.
John P. Treanor, Dorchester.
Edward P. Starbird, Roxbury.
Henry B. Stevens, West Roxbury.

1895.

Fred Drew, Boston.
Ben. H. Metcalf, Winthrop.
William H. Robey, Jr., Roxbury.
Frank L. Morse, Somerville.
Augustus W. Dudley, North Cambridge.
John R. Cowan, Danville, Ky.
Herman T. Baldwin, Chestnut Hill.
Frank E. Bateman, Somerville.
Charles B. Dunlop, Worcester.
Henry P. Lovewell, Providence.
Cleon M. Hibbard, died, 1898.
Henry D. Chadwick, Waltham.
Arthur W. Marsh, Worcester.
Charles M. Hutchinson, Cambridge.
William N. Tenney, Canton
John J. Curry, died, 1903 (Fort Myer, Va. ?).
Herman W. Gross, Brookline.
Calvin G. Page, Boston.
Frank W. Harriman, died in hospital, 1896.

1896.

Thomas B. Cooley, Ann Arbor, Mich.
George F. Dow, Reading.
Edward N. Libby, Roxbury.
Joseph A. Mahon, Dorchester.
William Thorndike, Milwaukee, Wis.
Vivian Daniel, Watertown.
Hyrum A. Anderson, Salt Lake City, Utah.
Charles S. Wright, Boston.
Edward W. Pinkham, Winthrop.
Sylvester F. McKeen, Allston.
Samuel W. Ellsworth, Quincy.
Lawrence W. Strong, Brighton.
John T. Bottomley, Boston.
Harry E. Sears, Beverly.
Arthur T. Mann, Tewksbury.
George T. Page, Cambridge.
George F. Freeman, Washington, D. C. (U. S. Navy).
William H. Downey, Peabody.

1897.

Donald R. Hinckley, died, 1901, New Haven. Conn.
Arthur M. Worthington, Dedham.
David N. Blakeley, Roxbury.
Lyman Allen, Burlington, Vt.
Henry J. Perry, Boston.
John H. Moore, Boston.
William H. Fitzgerald, Middletown, Conn.
C. S. Knight, Bangor, Me.
Frank R. Stubbs, Newton.
Ralph C. Larrabee, Boston.
Fred G. Burrows, San Francisco, Cal.
William G. Adams, Hyde Park.
Sanford R. Catlin, Rockford, Ill.
Randolph C. Hurd, Newburyport.
Patrick F. Kelleher, Cambridge.
Robert W. Guiler, Washington, D. C. (U. S. Army).
David H. Walker, Boston.
Elmer S. Tenney, Washington, D. C. (U. S. Army).
Charles F. Caverly, Boston.

1898.

Ralph E. Stevens, Marlborough.
Arthur I. Weil, New York.
Herbert E. Buffum, Somerville.
Harry A. Barnes, Boston.
Michael F. Burke, Natick.
Frederick W. Stetson, Dorchester.
Lesler F. Potter, New Bedford.
John H. Pettee, Roxbury.
John H. Blodgett, Boston.
Theodore S. Bacon, Springfield.
George E. Emery, Worcester.
Alfred T. Huntington, died, 1899.

Michael J. Cronin, Roxbury.
Alphonso B. Brown, Newburyport.
Arthur S. Hartwell, Boston.
Ernest Burke, died, Quincy, 1903.
Joseph A. Dorgan, Lawrence.
Edward H. Mackay, Clinton.
Harry C. Low, Boston.

1899.

Frederick R. Cummings, Concord, N. H.
William W. Duckering, Dorchester.
William E. Currier, Leominster.
Russell H. Birge, Cleveland, O.
Luther G. Paul, Boston.
Stanton S. Eddy, Middlebury, Vt.
Charles R. C. Borden, Boston.
Philemon E. Truesdale, Fall River.
Albert Moser, Washington, D. C.
Walter A. Lane, Milton.
William R. P. Emerson, Boston.
Robert Hazen, Thomaston, Conn.
Oscar F. Fischer, Salem, Dent County, Mo.
William H. Rose, Worcester.
William T. Bailey, Boston.
Frederick W. Murdock, Derry, N. H.
Foster H. Carey, Worcester.

1900.

Charles B. Wormelle, Brighton.
Joseph H. Saunders, Brookline.
Frank H. Holt, Boston.
LeRoi G. Crandon, Boston.
Lewis H. Jack, West Newton.
John G. W. Knowlton, Roxbury.
Leo V. Friedman, Boston.
James Taylor, Jr., Worcester.
Halbert S. Steensland, Syracuse, N. Y.

1901.

Charles B. Wormelle, Boston.
Joseph H. Saunders, Brookline.
Frank H. Holt, Boston.
LeRoi G. Crandon, Boston.
Lewis H. Jack, West Newton.
John G. W. Knowlton, Exeter, N. H.
Leo V. Friedman, Boston.
James Taylor, Jr., Worcester.
Halbert S. Steensland, Syracuse, N. Y.
Walter C. Howe, Boston.
Harry H. Germain, Boston.
Henry J. Hoye, Providence, R.I.
Walter A. Griffin, Sharon.
Hartley W. Thayer, Newtonville.
Howard H. Smith, Boston.
James H. Shannon, Cambridge.
Peter H. Thompson, Boston.
Walter R. Brinkerhoff, Boston.

1902.

David C. Scannell, Boston.
Richard Collins, Waltham.
Theodore C. Beebe, Jr., Boston.
Charles B. Fuller, Waltham.
Alvah C. Cummings, Newton.
John H. Mullen, Lynn.
William H. Lowell, Boston.
Elmer E. Southard, Boston.
Herbert C. deV. Cornwell, New York City.
Robert Soutter, Boston.
William J. McCausland, Quincy.
Frederick B. Willard, Hartford, Conn.
Irving J. Fisher, West Newton.
Harris B. Haskell, Auburndale.
Howard B. Jackson, Boston.
William G. Dwinnell, Pawtucket, R. I.
David Nelson, Boston.
Ralph L. Thompson, Boston.

1903.

Alfred H. Childs.
Thomas F. Leen, Charlestown.
Samuel G. Underhill, Boston.
Percy Bartlett, Hanover, N. H.
David Cheever, Boston.
Peer P. Johnson, Beverly.
Wallace D. Walker, Portsmouth, N. H.
Louis Hoag, Danvers.
Edward K. Ellis, Hyde Park.

Michael F. Barrett, Brockton.
John S. Waterman, Providence, R. I.
John H. Cunningham, Jr., Boston.
Lincoln F. Sise, Medford.
Fritz W. Gay, Malden.
Dwight W. Lewis, New Haven, Conn.
Nathaniel R. Mason, Boston.
Ellis E. Foster, New Bedford.
William F. Roberts, Waverley.

1904.

Appleton W. Smith, Boston.
William C. Peters, Bangor, Me.
Stuart V. R. Hooker, Boston.
William F. O'Reilly, Lynn.
Nathaniel K. Wood, Boston.
George P. Sanborn, Boston.
Russell S. Rowland, Detroit, Mich.

XXV.

HISTORICAL SKETCH OF THE BOSTON CITY HOSPITAL TRAINING SCHOOL FOR NURSES.

By George H. M. Rowe, M.D.,
Superintendent of the Boston City Hospital.

From the year 1864, when the Hospital was first opened, to 1879, the nursing in the Hospital was done mostly by women, and in the "old-fashioned way." Many of them were excellent nurses, but there was no systematic instruction or drill. Whatever a nurse acquired was the result of sheer force of character, and not on account of any system. The trustees, under date of November 20, 1877, voted to establish a Training School for Nurses. The School is chronicled as beginning January 22, 1878. The credit of establishing this movement belongs to Dr. Edward Cowles, at that time Superintendent. The School was the fifth of the regularly systematized training schools in the United States, having been preceded by the New England Hospital for Women and Children in Roxbury, the New Haven Hospital in Connecticut, the Bellevue Hospital in New York City and the Massachusetts General in Boston, in the order named. According to the special report on Benevolent Institutions, issued by the Census Bureau of the Department of Commerce and Labor, there were, in 1905, 867 training schools and 1,484 hospitals in the United States.

The early growth and development of the Training School was slow, and attended with much difficulty. The public was not fully conversant with the reasons or the methods of training in hospitals, or the advantages of well trained nurses in family sickness. Even the Staff, as a whole, was not in favor of the movement. Year by year some progress was made, the school gradually developed, the number of applicants increased, giving a better and higher grade of young

women to become nurses. Last year there were nearly 900 applicants to fill about 60 vacancies.

Great impetus was given to the school in the year 1885, when the Nurses' Home was built on East Springfield street. This was the third building exclusively used in any hospital in the United States for housing the pupils of a training school. Another great impetus followed the occupation of

MISS LINDA RICHARDS,
Superintendent of Nurses, 1878–1879; 1882–1885.

the Vose House for nurses in the year 1900. The number of assistant superintendents has been increased, additional lecturers and teachers supplied, and excellence of work has resulted most happily by the improved training of the nurses who are graduated.

The course of training required two years until recently, when it has been increased to three years. (The course of training, lectures, drills, demonstrations, can be found in the recent annual reports.) The school is now in the transition period, and it is hardly possible to present a finished curricu-

lum during this evolution, while it is undergoing a constant change in order to develop the best course available for three years' work.

The training is now preceded by a preparatory school of four months, which may later be further increased. All the probationers are assigned to a teacher, who has special charge of their study, work and drill. Their afternoons are given chiefly to study, class work and practice. They are sent

SCHOOL-ROOM OF PREPARATORY CLASS.

into the wards to learn certain simple details, such as how to care for the linen and the ward work generally, feed feeble patients, and other practical work.

There is a "practice room" in the Nurses' Home equipped with ward beds, bedding, all kinds of linen, utensils, medicine closet, where the pupils are taught and drilled in actual work. There is a room in the second story of the Vose House arranged as a schoolroom. A special course in domestic science is given. In these two rooms they obtain most of their preliminary teaching and drill, reinforced by

actual practice in the wards, but they are not entrusted with the care of patients.

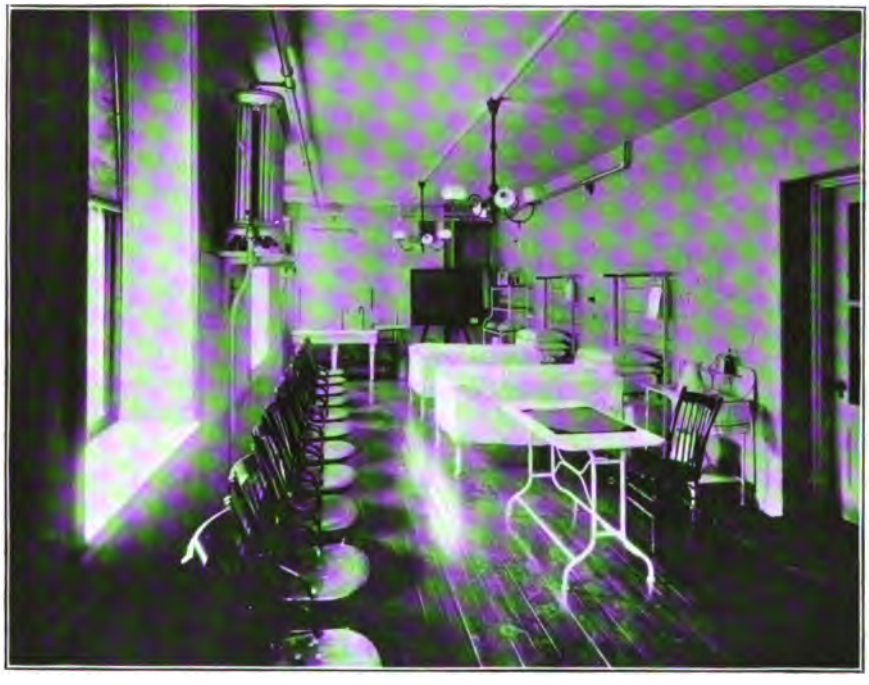
Many of the difficulties of the two years' course will disappear, — an important one is lessening the constant change of nurses from ward to ward and station to station, in order to give them proper and as complete a training as possible. They will now have more training and for longer periods, which

MISS ALMIRA C. DAVIS,
Superintendent of Nurses, 1879-1882.

will give greater continuity to the routine of work, and benefit the patients by better care and nursing. Nurses will receive eight months of medical training, eight months of surgical training, four months of gynæcological work, six months at the South Department for infectious cases, four months at a maternity hospital, and for the remaining time they will be assigned to work in the operating room, Out-Patient Department, emergency training at the Relief Station and other special work. During the last six months of the third year, it is proposed to offer elective courses, whereby

nurses may, as far as practicable, choose special training in the branches they prefer the same as in a college course.

The training school is a part of the Hospital organization the same as other subdivisions of the administration. It is under the charge of the trustees of the Hospital, two trustees constituting the Committee on Training School.



PRACTICE ROOM OF PREPARATORY CLASS.

To them is entrusted the special charge of matters not sufficiently important to be considered by the whole Board.

Dr. Cowles, who organized the school, remained until June 1, 1879, when he was succeeded by the writer, who has aimed to develop and enlarge the character of the School and to keep it in line with the foremost institutions for nursing.

The first Superintendent of Nurses was Miss Linda Richards, who came to the Hospital January, 1878, and remained until July, 1879, when she was obliged to leave on

account of ill-health. Following the resignation of Miss Richards, Miss Almira C. Davis served as Superintendent of Nurses from 1879 to 1882, when Miss Linda Richards again took up the work. In November, 1885, Miss Richards resigned to become the pioneer of American missionary nursing in Japan. Miss Lucy L. Drown was then appointed superintendent and still retains the position.

NURSES' CLASS-ROOM.

There are (1906) 148 nurses in the training school, including graduate head nurses in charge of wards, undergraduates and probationers. There are 154 beds in the Nurses' Homes, for their accommodation, and it is a pleasure to record that in no part of the Hospital has the improvement been more marked than in the housing and diet of nurses.

The number who have been graduated from the training school is as follows :

1879	6	1893–1894	40
1880	14	1894–1895	33
1881	12	1895–1896	32
1882	8	1896–1897	36
1883	25	1897–1898	54
1884	19	1898–1899	39
1885	19	1899–1900	49
1886	29	1900–1901	48
1887	30	1901–1902	54
1888	22	1902–1903	44
1889	28	1903–1904	46
1890	30	1904–1905	48
1891–1892 (13 mos.)	34	1905–1906	47
1892–1893	25		—
Total graduates to February 1, 1906			871

MISS LUCY L. DROWN,
Superintendent of Nurses, 1885 to Date.

The history of these graduates is as follows:

Superintendents of Hospitals or Training Schools	34
Other responsible positions in Hospitals	26
Private nursing or positions involving nursing	400
Retired	189
Married	184
Dead	38
Total	871

Roster of Lecturers, Instructors and Teachers.

George H. M. Rowe, M.D., Superintendent and Lecturer.

Miss Lucy L. Drown, Superintendent of Nurses and Teacher.

Miss Frances E. Morley, First Assistant Superintendent of Nurses and Teacher.

Miss Charlotte A. Brown, Second Assistant Superintendent of Nurses and Teacher in Preparatory Course.

Mrs. Anna E. E. Rothrock, Third Assistant Superintendent of Nurses and Teacher.

Miss Elizabeth G. Mason, Night Supervisor, and Instructor in care of patients by night.

Miss Ida Washburne, Teacher in nursing of infectious cases and diseases of children.

Miss Ursula C. Noyes, Supervisor of Nurses and Teacher at South Department.

Miss Emma M. Nichols, Instructor in emergencies and accidents.

John H. McCollom, M.D., Instructor and lecturer in infectious diseases and diseases of children.

Ralph C. Larrabee, M.D., Lecturer in physiology and medical diseases.

David D. Scannell, M.D., Lecturer in anatomy and surgical diseases.

Frank H. Holt, M.D., Lecturer in materia medica.

Mrs. Boland-Pequignot, Teacher in cooking.

Mrs. Gulli J. Callowhill, Teacher in *massage*.

XXVI.

THE LIBRARIES OF THE BOSTON CITY HOSPITAL.

By George W. Gay, M.D.

Through the generosity of friends and the public spirit of the trustees, the City Hospital is, and for a long time has been, well supplied with books, magazines, journals and all sorts of reading matter suitable for the use of the staff and the inmates of a general hospital.

History, biography, travels, fiction, etc., for the adults, and story and picture books for the children, together with toys, games, puzzles, etc., are most efficient aids in whiling away the hours of a tedious convalescence. Only those who have had actual experience can fully appreciate the comfort to be derived from these agencies. That the books are freely used is shown by the fact that the most popular ones are read to pieces in a comparatively short time, and have to be renewed. The wards would be dreary indeed without a varied assortment of reading matter.

The general and the medical libraries of the Hospital are fortunate in that they have permanent funds, the income of which suffices to keep them fairly well supplied with the best books, magazines, etc. They are as follows:

Perkins Fund (for medical books)	$3,750
Shuman Memorial Fund (for ward libraries) . . .	2,000
Carter Library Fund (for the nurses' libraries) . .	2,000
Goodnow Library Fund (for reading matter for patients)	1,000
	$8,750

The Hospital is also very fortunate in being the recipient of many books, reports, reprints, journals, etc., in the way of exchange or gift, so that the total number of books at

present amounts to between six and seven thousand. They are distributed as follows:

	Volumes.
Medical Library	3,221
Shuman Memorial Libraries	1,800
Nurses' General Library	858
Training School Library	170
South Department Nurses' Library	279
Convalescent Home Library	175
Relief Station Nurses' Library	135
	6,638

This number does not include the great mass of paper-covered novels, illustrated magazines, etc., that are constantly being received, and are so eagerly sought by the patients. It is to be hoped that the supplies will never be less than they have been in the past, as this sort of literature is so well suited to the tastes of the inmates of the Hospital that any amount can be used to good advantage. One can readily understand that it requires a large amount of reading matter to supply a family of more than a thousand persons that are constantly shifting in and out of the Hospital.

The Medical Library.

Every large general hospital should have a good working medical library as a part of its armamentarium. Such a department, well equipped, is in constant demand by its visiting and house staff, and adds greatly to the convenience and efficiency of the service. Once properly established and organized, it need not be an expensive matter to keep it up to date and in good working order. Like everything else, it requires intelligent care and oversight, but the results amply compensate for all the necessary labor and expense, as is conclusively shown in our library and also in the famous "Treadwell Library" at the Massachusetts General Hospital.

Aside from the leading medical journals, as issued and on file, a medical library should contain the standard works of reference, the more important text-books, monographs, hospital and kindred reports, and plates and illustrations, that

would naturally be required in the work of the institution. It is needless to say that a library should be located in a place that is readily accessible, and as free from outside disturbances as possible.

The City Hospital has been especially fortunate in regard to its medical library. Long before the institution was opened for the reception of patients the trustees began to receive gifts of medical books and other articles of professional use and interest. Dr. H. W. Williams, the well-known ophthalmologist, presented the Hospital with a fine French skeleton that did duty for many years. The trustees also purchased a few medical books for the use of the staff.

Four days after the dedication of the Hospital Dr. Borland gave some valuable books, and Dr. E. T. Wilson presented a fine set of dental instruments, some of which are in use to-day, after more than forty years. Dr. Silas Durkee, a member of the original consulting staff, a good friend to the Hospital, as shown by the fact that he made it the residuary legatee of his estate, gave us valuable books and plates at various times before his death. Dr. William E. Coale, a genial physician of the West End, well known to some of the older members of the profession, was generous in gifts of medical literature. At later times many medical books and journals have been received from Drs. Morland, Buckingham, Williams (H. W.), Mason, Fifield, Cotting and many others too numerous to mention individually. These gifts have been received very gladly, and have done much to foster an interest in the institution, and to lay the foundation of an excellent medical library.

In 1877, in response to the request of a committee of the senior staff, the trustees granted an appropriation of $150 annually for the purchase of medical books and journals for the Hospital. This generous appropriation has been continued annually. But the Hospital was fortunate in receiving a legacy for fostering this object.

Mrs. Mary G. Perkins, living at the corner of St. Botolph and West Newton streets, Boston, a patient of the writer's, and at his suggestion, made this Hospital her residuary lega-

tee, by which act the institution received seventy-five hundred dollars ($7,500).* One-half of the income is to be expended for easy or rolling chairs, crutches, trusses, artificial limbs, etc., and the other half for books, etc., for the medical library.

This generous gift of Mrs. Perkins at once placed the library upon a firm financial basis, and its growth and development have been steady and satisfactory from that time to the present.

For many years the medical books, and also those for the use of the patients, were kept in the general reception room at the left of the entrance to the "centre," now used as an executive office. While it was oftentimes awkward and inconvenient to get at them, yet it was the only available place for the time being. The clinical records were stored in a dark closet in the basement.

The time finally came when, through the natural growth of the Hospital, the increasing number of books, medical and non-medical, due in no small degree to the Perkins fund, more room for their accommodation and for other purposes was absolutely demanded by the situation. Therefore in 1888 the trustees asked the city government for an appropriation of $18,000 for a medical library building, which should give ample room for medical books, journals, clinical records, card catalogues, etc., and also furnish accommodations for a large dining-room for various officials of the Hospital, as matron, apothecary, house officers and others. The general library was distributed among the various wards, thus placing the books within easy reach of the patients.

The library building was erected in due season, and opened for service in March, 1891. It has proved to be even more useful than was anticipated by the administration. Nearly two thousand volumes of medical books were placed upon the shelves at the opening of the library, and a large number of medical journals, pamphlets, monographs, etc., were put into a room especially designed for the purpose, and the clinical records and card catalogues have a room to themselves.

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*Had it not been for a peculiar claim that was brought against Mrs. Perkins' estate at the last moment, the amount of the bequest received would have been three or four times as large as it was.

In 1903 the library contained 3,888 volumes of books, and the card catalogue of diseases had increased to 192,137. During that year, 776 periodicals and 747 medical monographs and pamphlets had been received.

In the early years of the Hospital a large number of books had been received, consisting of reports, French, German and other publications, which were no longer of use in an up-to-date working library not possessing unlimited room. As the shelves had become full, and additional room was necessary, the library committee transferred 745 volumes to the Boston Medical Library, thus affording considerable space for the constant additions being made.

On January 31, 1905, the medical library contained 3,221 volumes. The card catalogue contained 215,060 cards. During the year there had been received 385 medical monographs and reprints, 165 hospital and health reports and 615 periodicals. The library subscribes for eighteen medical journals, two are given by members of the staff, and eleven others are received from various sources. The principal journals are bound for permanent preservation.

The medical library forms a most useful adjunct to the Hospital, and its advantages and conveniences are highly appreciated by the staff, house officers, and all who have anything to do with it. Besides affording ample accommodations for the books, journals, pamphlets, monographs, clinical and other records, it provides excellent facilities for the medical, staff and social meetings, for the examinations of house officers, and nurses when promoted and graduating. Under certain restrictions it is used as a reading room and various public functions. The walls of the principal room are hung with the pictures of deceased and past members of the staff. One room is used as a private office by the Superintendent, and a large amount of clerical work is done in the pamphlet and record rooms. The library is growing in usefulness and importance, and the trustees are to be congratulated upon their enterprise and liberality in establishing and maintaining it in its most efficient and satisfactory condition.

The General Libraries.

The general libraries, like the medical, began in a small way by gifts from friends of the Hospital. A large number of duplicates were received from the Boston Public Library. As might be supposed, some of the books were antiquated, others too classical or too scientific for the ordinary hospital patient. For example, there was a large number of the Edinburgh Reviews thirty or forty years old. The day of short stories had not arrived. There were no "David Harums," or "Gallaghers," or "Short Sixes," or "Sherlock Holmes," etc., etc., that are so popular at the present day.

In 1874 Mr. George Goodnow, a relative of Mr. Elisha Goodnow, who established the "Goodnow Fund," gave $1,000, "the interest of which is to be expended annually by the Board of Trustees in replenishing the library of the Hospital with books and pamphlets suitable for the reading of the patients during convalescence." No attempt was made to establish a formal library with this money, but books were purchased and placed in the different wards to be more accessible to the patients. Previous to this time the books had been kept in the large room in the "centre," now used as an office, and on two days in the week the nurses were supposed to go and select what was wanted so far as was possible. For some time the books had been so few and so unsatisfactory that the custom had fallen into disuse.

About the year 1888 Dr. Rowe, to whom the writer is indebted for the data relating to the general libraries, had a few small bookcases made holding forty or fifty volumes apiece, and from the "Goodnow Library Fund" there was gradually established a small library in each ward. They were replenished about twice a year, and through the income from this fund and the gifts of friends of the Hospital, the number of books gradually increased, forming practical and useful libraries. Distributing the books among the different wards and shifting them from one ward to another has added greatly to the interest and encouraged a wider use of the library than was possible under the former plan.

Under date of October 25, 1905, the Hospital through its trustees, received from the children of the late Mrs. A. Shuman a gift of twenty mahogany bookcases, books sufficient to fill them, a special book-plate, and two thousand dollars in money, with the following conditions:

First.— Twenty mahogany bookcases to be placed in the various wards of the Hospital; each case to contain about sixty books, and to bear the following inscription: "Hettie Lang Shuman Memorial Library."

Second. — Books suited to the interest of the average patient, sufficient to fill these bookcases, as an initial gift.

Third.— A suitably engraved book-plate to be placed in each book.

Fourth.— The sum of two thousand dollars ($2,000) in money, which shall be deposited with the City Treasurer of the City of Boston and invested according to the ordinances of the city, to constitute a special fund to be known as the "Hettie Lang Shuman Memorial Library Fund," the interest of which shall be annually expended in perpetuity by the trustees for new books for the use of Hospital patients and for the replacing of volumes that have become either damaged, lost or destroyed.

In presenting these gifts, the undersigned desire to assure the trustees of their sincere and enduring interest in everything pertaining to the welfare of the Hospital, not only by reason of the long and intimate relations of their father to its management, but also with a full appreciation of the splendid work that is done for the sick poor of the City of Boston.

By the establishment of this fund we desire to help on the good work in a manner that will come in close touch with as many patients as possible, as well as perpetuate the memory and the ever helpful spirit of our dear mother.

We have the honor to remain,

Yours faithfully,

EMMA SHUMAN WEIL, BESSIE SHUMAN STEINERT,
AUGUST WEIL, ALEXANDER STEINERT,
LILLIAN SHUMAN DREYFUS, EDWIN ARTHUR SHUMAN,
CARL DREYFUS, GEORGE HARRISON SHUMAN,
THERESA SHUMAN RATSHESKY, I. A. RATSHESKY,
SIDNEY EVERETT SHUMAN.

In accordance with the terms of this gift, twenty handsome mahogany bookcases have been constructed and placed in the wards, and new books to the number of eighteen hundred have been placed in them, thus forming an ideal supply of reading matter for the inmates of the Hospital.

The gift is a most admirable one. The bookcases are an ornament to the wards, and the reading matter has been

selected by Dr. Rowe, with special reference to the class of patients usually assigned to the different wards. It has proved a most beneficent and gracious gift for the entertainment of the sick.

Training School Library.

In the early years of the training school there were very few books in possession of the school. In fact there were very few books on nursing published during the first ten years of the school. The library contained some works on anatomy, physiology, etc., such as were generally used in high schools and academies. When the Nurses' Home was opened in 1885 two libraries were obtained from the appropriation for furnishing, one of text-books and one of general reading. It was intended that the library of text-books should contain all books at that time issued for the purpose of instructing nurses, and in sufficient number that the members of the class should each have access to one. The number has constantly increased, until now there is a library of 170 of the most recent books on nursing, and quite a large number of books of reference.

Nurses' General Library.

This library started with about 300 books, and went through various vicissitudes. It was free to all for twelve years, when by time and use the books had become worn out. When the Vose House was opened in 1890, another general library was installed from the appropriation for furnishing, and the old books were distributed in various parts of the Hospital, some going to the South Department.

The Martha Howard Thurston Carter Library Fund.

In 1903, the daughters of the late Mrs. Martha Howard Thurston Carter gave to the Hospital the sum of two thousand dollars ($2,000) in trust, "the interest of which was to be expended for books for the benefit of the Training School Nurses." This fund gives an income of $80 a year.

The daughters in addition gave two hundred dollars ($200) as an initial gift with which to start a new library. The nurses now have access to a library of their own, and are not obliged to go elsewhere for their reading matter.

About 40 per cent. of the income from this fund is expended for books of permanent value, as books of reference, standard literature, etc., and about 60 per cent. for fiction and lighter reading suitable for the recreation of the nurses when off duty. There are 858 books in this library, of which 325 were purchased with the Carter Fund.

Relief Station Nurses' Library.

At the formal opening of the Relief Station in Haymarket square, in 1902, the nurse ushers solicitously called the attention of visitors to the fact that while the nurses had a bookcase there were no funds at the command of the Hospital for supplying the necessary books. Shortly afterwards, Col. Hugh Cochrane asked Dr. Rowe to fill the cases with such books as he thought appropriate for the nurses and send the bill to him. This was very cheerfully done, and 135 books were purchased at a cost of about $110. The books are highly appreciated, as well as the generosity of the donor.

The Library of the South Department.

The South Department has no fixed libraries for patients by reason of the danger of infection. Illustrated papers and magazines are supplied to the patients largely by contributions from outside. These are naturally short lived, and soon ready for cremation to prevent the spread of infection in passing them from one patient to another. Books must be used with much care in a contagious hospital, as they cannot be thoroughly sterilized.

The libraries in Nurses' Homes of the South Department have 279 volumes, of which 141 are in the East Home, 75 in the West Home and 65 books on nursing. They are principally books of fiction, travel, biography and essays, sufficient to supply the needs of the nurses during the short time available for reading.

Library of the Convalescent Home.

The Convalescent Home in Dorchester has a library of 175 volumes obtained partly by purchase with the proceeds of the "Goodnow Fund," and partly by gift and otherwise. As the inmates are able to be out of doors more or less, books are probably in less demand here than in the general Hospital. The library is well adapted to the class of patients who use it.

XXVII.

GIFTS AND BEQUESTS TO THE BOSTON CITY HOSPITAL.

By George W. Gay, M.D.

In view of the fact that this Hospital was built and is supported by appropriations by the city instead of by private subscriptions, the gifts and bequests have been very generous indeed. Nearly half a million dollars have already been received, and more bequests are in prospect, simply awaiting the fulfilment of certain conditions imposed by the testators.

Three bequests by their munificence would seem worthy of special mention: The one from the estate of Mr. Thomas T. Wyman, one from the executors of the estate of Mrs. Ann White Vose, and one from Mr. Lamont G. Burnham, a former trustee.

While Mr. Burnham served less than three years as a trustee, yet in that short time he saw enough of the good work being done here to influence him to make the following bequest in his will: "To the Boston City Hospital the sum of one hundred and fifty thousand (150,000) dollars to construct and equip upon the Hospital grounds a building to be known as the Lamont G. Burnham Ward, for such uses and purposes as the trustees of said Hospital shall in their discretion determine." It is to be hoped that Mr. Burnham's example may serve as an incentive to others to go and do likewise.

Mr. Thomas T. Wyman was born in a neighboring city, but lived most of his life in South Boston. He was never engaged in active business, but by careful and conservative investment of an inherited fortune, and strict personal economy, he was enabled to leave $800,000 to local charities. This Hospital was one of three residuary legatees, and

received about one hundred and twenty thousand (120,000) dollars. The trustees of Mr. Wyman's estate, Messrs. A. F. Estabrook and Charles H. Watson, disclaim any credit in the assignment of the City Hospital gift in the following

LAMONT G. BURNHAM.

words: "The credit of the application of the money for the Relief Station in Haymarket square was due to the president of your Board of Trustees, Mr. Shuman, and we assure you it was a pleasure for all to co-operate with Mr. Shuman in the result."

Mrs. Ann White Vose, widow of Mr. Josiah Vose, lived on Washington street in the vicinity of Oak street. Mrs.

Vose died in 1875, and her husband ten years earlier. She left a large estate to various charitable objects, several of which were specified in her will. The City Hospital was regarded by her in a very favorable light in the opinion of

THOMAS T. WYMAN.

her trustees, Hon. George White, Judge of the Probate Court of Norfolk County, and his co-trustee, and they, therefore, when settling up the estate, upon the death of the only beneficiary, gave one hundred thousand (100,000) dollars to the Hospital to be expended for a new building for the use of the nurses of the Hospital. Her trustees merit

the highest appreciation of all those interested in the welfare of the nurses and the Hospital for their wise consideration in turning over this munificent sum for the above purpose. Credit is due in no small degree to Hon. Henry H. Sprague,

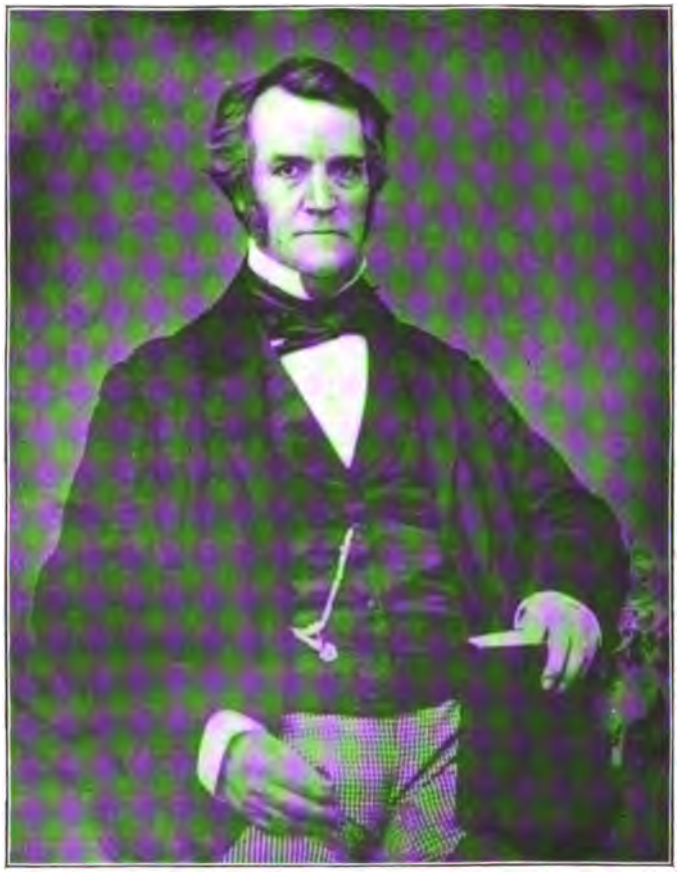
MRS. ANN WHITE VOSE.

at that time a trustee of the Hospital, through whose influence it was secured. The building erected with this money is most admirably adapted for the uses intended, and will be an enduring monument to the generosity of the donor and to the wisdom of her agents.

Another benefactor of this Hospital deserves more than a

passing notice, as he not only served as a consultant for some years, but made the institution his residuary legatee.

Dr. Silas Durkee, son of Hon. John Durkee, was born in Hanover, N. H., November 22, 1798. Was graduated from



SILAS DURKEE, M.D.

Dartmouth College, and took his medical degree at Bruns wick (now Bowdoin) College in 1822. After practising in Portsmouth, N. H., for some years, he removed to Boston in 1841, and became noted as a specialist in skin and venereal diseases. For a long time his writings upon these topics held a high position in medical literature, and most deservedly so, being clear, concise and practical. His "Treatise on Venereal

Diseases" went through six editions, and can be read to-day with profit as well as pleasure, which cannot be said of all medical books half a century old. The Durkee Fund received by the Hospital amounts to $15,050.

Dr. Durkee belonged to many scientific societies at home and abroad and took a keen interest in his profession. He was a fine type of the old-time physician. He died in July, 1878, in the eightieth year of his age.

In the language of the trustees, "public-spirited citizens can in no way better contribute to the well-being of the public, particularly by way of charity, than by donating money to the Hospital, for the support of free beds, or such other specific purposes as they may deem best." "No object can appeal more strongly to the generously disposed citizens than the welfare of the sick. Of all charities, it is the first and greatest."

A list of the bequests and some of the more important gifts to the Hospital appear in the following pages. The writer very much regrets that he cannot make due acknowledgments to each donor, but the great multitude of benefactors renders this simply impossible. Each and every one can rest assured, however, that their favors are most cordially appreciated.

Bequests to The Boston City Hospital.

Goodnow Fund. — Elisha Goodnow of South Boston bequeathed to the city "all the rest and residue of my estate, real and personal, not otherwise disposed of," for the purpose of establishing in the eleventh or twelfth wards of the city a hospital for the sick; one-half of said fund to be applied for the establishment and maintenance of free beds, which should always be at the disposal and under the control of the officers of the government of said hospital for the time being.

Nichols Fund. — Mr. Lawrence Nichols, who died in 1862, made a bequest to the city of the sum of $2,000 for "the establishment and endowment of a City Hospital."

NORCROSS FUND. — January 1, 1868. The trustees received the sum of $2,000 from Hon. Otis Norcross, the recent President of the Board of Trustees, as the foundation of a fund for the benefit of patients leaving the Hospital poor and destitute of proper clothing.

BALL FUND. — April 1, 1870. The trustees received from the estate of Mr. Jonas Ball, a recent trustee, the sum of $1,000 for the same purpose, and under the same restrictions, as the Norcross Fund.

GOODNOW LIBRARY FUND. — 1874. Donation of Mr. George Goodnow, the interest of which is to be expended annually by the Board of Trustees in replenishing the library of the Hospital with books and pamphlets suitable for the reading of the patients during convalescence.

SHAW FUND. — 1875. Bequest of the late Mary Louisa Shaw, the income of which is to be expended by the trustees for the purchase of flowers and fruit for the use and comfort of the patients in the Hospital.

PERKINS FUND. — 1889. Bequest of the late Mrs. Mary G. Perkins of Boston. The income of this fund of $75,000 is to be expended as follows: one-half for books for the medical library of the Hospital, and the other half for the purchase of trusses, artificial limbs, rolling chairs and surgical appliances for the use and relief of patients in or leaving the Hospital.

CHEEVER FUND. — 1889, $2,000. 1897, $1,000. Gift of Dr. David W. Cheever, senior surgeon, the income of which is to be semi-annually expended by the trustees to purchase and present to each house surgeon, when his service expires, a pocket case of surgical instruments as a gift from Dr. David W. Cheever.

CHARLES P. HEMENWAY FUND. — 1894. Gift of Mrs. Charles P. Hemenway of $5,000. The interest of this sum

is to be expended for a free bed, to be known as the "Charles P. Hemenway Memorial Bed."

HERBERT L. BURRELL ETHER PRIZE FUND. — 1896. Gift of Dr. Townsend William Thorndike, the son of Dr. William H. Thorndike, the distinguished surgeon of this Hospital for nearly twenty years, of $1,000. From the interest of this sum there is to be given semi-annually a money prize to the house officer who administers ether or other anæsthetic in the most skilful and humane manner.

SILAS DURKEE FUND. — 1900. Bequest of the late SILAS DURKEE, of $15,050, to the City of Boston in trust for the benefit of The Boston City Hospital.

DANIEL S. FORD FUND. — 1900. Bequest of the late DANIEL S. FORD, of $6,000, in trust for the benefit of The Boston City Hospital.

CARTER FUND. — 1903. Gift of the daughters of MARTHA HOWARD THURSTON CARTER, of $2,000, in trust, the interest of which is to be expended for books for the benefit of the Training School nurses.

LAMONT G. BURNHAM FUND. — 1904. Bequest of the late LAMONT G. BURNHAM, a Trustee of The Boston City Hospital, of $150,000, to construct and equip upon the Hospital grounds a building to be known as the Lamont G. Burnham Ward, for such uses and purposes as the trustees of the Hospital shall, in their discretion, determine.

Bequest	$150,000 00
Interest received from executors of will for one year	3,750 00
Interest credited by City Treasurer to January 31, 1905	273 05
Balance January 31, 1905	$154,023 05

Recapitulation of City Hospital Trust Funds.

Goodnow Fund. — One certificate City of Boston six per cent. bond for $1,000, one four per cent. bond for $16,500, one four per cent. bond for $4,500, and one four per cent. bond for $4,000	$26,000 00
Carried forward	$26,000 00

Brought forward	$26,000 00
Nichols Fund. — One certificate City of Boston six per cent. bond for $1,000, and one four per cent. bond for $1,000 .	2,000 00
Norcross Fund. — One certificate City of Boston four per cent. bond	2,000 00
Ball Fund. — One certificate City of Boston four per cent. bond	1,000 00
Goodnow Library Fund. — One certificate City of Boston four per cent. bond	1,000 00
Shaw Fund. — One certificate City of Boston six per cent. bond	2,000 00
Perkins Fund. — One certificate City of Boston four per cent. bond	7,500 00
Cheever Fund. — One certificate City of Boston four per cent. bond for $2,000 and one for $1,000	3,000 00
Hemenway Fund. — One certificate City of Boston four per cent. bond	5,000 00
Herbert L. Burrell Ether Prize Fund. — One certificate City of Boston four per cent. bond	1,000 00
Silas Durkee Fund. — One certificate City of Boston three per cent. bond	15,050 00
Daniel S. Ford Fund. — One certificate City of Boston three per cent. bond	6,000 00
Carter Fund. — Two American Telephone and Telegraph Company's bonds of $1,000 each	2,000 00
Lamont G. Burnham Fund. — Deposited with the City Treasurer of the City of Boston	154,023 05
	$227,573 05

Additional Gifts and Bequests which have been Expended by the Boston City Hospital.

1898. Bequest of Thomas T. Wyman of $119,820.40, which with interest amounted to $125,248.68. It was used for alterations and additions to kitchen, $26,374.99, and for erecting the Relief Station in Haymarket Square, $98,873.69.

1897. Bequest of Ann White Vose of $100,000, which with interest amounted to $103,984.79, was used to construct the Vose House for Nurses.

1898. Gift of Mrs. B. P. Cheney, Sr., of $1,000 for screening the Hospital wards.

1886. Gift of Dr. Charles G. Weld, a former house officer, of $500, for the Library for the Nurses' Home.

1891. Gift from the West End Street Railway Company of $500. To be applied to the current expenses of the

Hospital for the year 1891, in consideration of the treatment by the Hospital of the employees of the company.

1902. Received from ex-house officers $995 in part payment for a handball court.

1898. A lady and her two daughters gave $700 for the welfare and comfort of the sick soldiers arriving in Boston during the Spanish-American War, and receiving treatment at the Hospital.

1900. Bequest of Morris Louis of $250 was used for the purchase of rolling chairs and a spinal carriage.

1903. Received $200 from the Misses Carter for the purchase of books for the Library of the Training School for Nurses.

1897. Sixty dollars sent anonymously from a former free patient was added to the Goodnow Library Fund. Five dollars, also received from a patient, was added to this fund.

1902. Bequest of Bridget O'Brien, a former patient, $45.

1898. Gift of Dr. E. B. Baldwin of Saranac Lake, N. Y., of $20, to be applied towards the general fund of the Hospital for use in X-Ray work.

1902. Gift of $1.22 from Francis Thomas of Liverpool, England, as an expression of gratitude for treatment received in the Hospital.

1904. Gift of $3 from Eng Fun.

Gifts and Bequests to the Boston City Hospital Not Yet Received.

May 15, 1901. Item 17 of will of George L. Thorndike of East Boston. "On the death of the last legatee of this, my will, it is my request that my Trustees shall co-operate with the Trustees of the Boston City Hospital, that when my estate exceeds in value the sum of $200,000, I direct that the whole value of said estate be used to construct a hospital in some suitable location in said City of Boston, to be furnished by said city free from expense to my estate. The said Hospital, when completed, to be the property of the said City of Boston, and it is my request that my Father's, Mother's, and Sister's portraits, and sundry furniture, engravings, and ornaments shall be cared for by the trustees of said Hospital."

May 10, 1904. Bequest of Ann E. Taggard, of East Boston, of the residue of the estate, amounting to $11,000, to the City of Boston, on condition that the city establish and maintain an emergency hospital in East Boston.

June 30, 1904. A communication was received from the chairman of the Boston City Hospital Nurses' Alumni Association, petitioning the trustees to accept $2,000, in trust, towards maintaining a bed for graduate nurses of the Boston City Hospital.

August 31, 1904. Voted that the sum of $2,000 be accepted, it being provided that graduate nurses, eligible for admission, the same as other patients, according to their diseases or ailment, be admitted to such private rooms as may, for the time being, be best for the purpose, and that, in such cases, there be chargeable to the fund only the excess in the price of the private room over the price of an ordinary ward bed.

Among the large number of miscellaneous gifts received from the friends of the Hospital the following would seem worthy of special mention:

Hon. A. Shuman, President. An old framed print, representing a view of the grounds and structures of the United States Agricultural Society in 1855, the same being the spot where the Hospital is now located. Two American flags.

Dr. Charles G. Weld. A Piano for the Nurses' Home. Two hundred and twenty-two French scalpels.

Miss Elizabeth Cheney. An X-Ray apparatus to the value of $3,000.

Arthur S. Estabrook and Charles H. Watson. An illuminating clock for Relief Station in Haymarket square.

Lamont G. Burnham. Copper weather-vane for tower of coal-pocket.

Dr. O. F. Rogers. Bust of Dr. John C. Warren.

Mrs. Jeffrey Richardson. Piano for Nurses' Home.

Dr. B. E. Cotting. Valuable picture of Boston in 1828.

Dr. Edward Cowles. Crayon portrait of George W. Pope, ex-President of the Board of Trustees.

Dr. J. B. S. Jackson. Descriptive catalogue of Warren Anat. Museum.

Waldo Flint. Medallion of Dr. John C. Dalton in Executive Office.

Dr. Wm. R. Lawrence. Many valuable books, original and others.

Dr. Silas Durkee. Valuable books and plates.

Dr. E. T. Wilson. A set of dental instruments.

Dr. Henry W. Williams. A French articulated skeleton.

Metropolitan R.R. Co. Liberal supply of tickets at numerous times.

Mlle. Anna de Raasloff. A screen and pictures.

John T. Bradlee. Mantle clock and valuable Bible.

L. A. Cutler, Superintendent. Vases with bronze stands.

Mrs. F. A. Bradlee. A sewing machine.

Dr. John Jeffries. Surgical instruments and apparatus belonging to his father, who died in 1819.

Trustees of Public Library. Many valuable books.

Mrs. Quincy Shaw. Cut flowers for several years.

Young Ladies of Wellesley College. Engraving of Corregio's Holy Night, Children's Ward.

Mrs. Frederick O. Prince. Japanese trays, pictures, vases and doilies.

Dr. William Ingalls. Large number of novels, etc.

James Bennett Forsyth (through Dr. Gay). Two hundred and twenty rubber bandages. Great number of books for the children.

Rev. D. W. Waldron. Books of Gospel Songs for Sunday Services.

Dr. W. A. Dunn. Photograph of Dr. Ludwig Ferdinand, Prince of Bavaria.

B. Y. M. Christian Union. Many carriage rides for convalescent patients.

Mr. Jerome Jones. Eight framed pictures for ward R.

The Hettie Lang Shuman Memorial Libraries for the wards. The gift of her children.

XXVIII.

ATHLETICS AT THE BOSTON CITY HOSPITAL.

By John Bapst Blake, M.D.

The necessity of exercise for the house officers of the Hospital was recognized in an uncertain way as far back as 1879–80. The late Dr. William Wotkyns Seymour, a well known athlete, while at the Hospital, improvised a small gymnasium in a vacant room below one of the wards. For a few years this was utilized more or less enthusiastically by some of the internes, but was gradually abandoned. Later, when lawn tennis was enjoying its first great burst of popularity, a court was laid out between Wards R and T, and for years this furnished grounds for enjoyable recreation. It was at least once the field of friendly battle for the inter-hospital tennis championship between the Boston City and the Massachusetts General Hospitals. This court was cramped and uncomfortably placed, and gave way in more recent years to the two really excellent courts which the Hospital now possesses.

From time to time, as some athletic interne appeared, some form of indoor athletics was devised to fit the space that was found available and to suit the taste of the particular individual. Sometimes it took the form of chest-weights and dumb-bells, sometimes of more complicated apparatus, and once or twice it existed only as a lively and exciting punching bag. And during many years of this change and wax and wane of indoor exercise one of the permanent Hospital officials was in the habit of taking a frequent morning run across to South Boston and back, a distance of approximately three miles. This performance, which continued with considerable regularity and but little comment for years, constitutes perhaps the most permanent example of athletics at the Hospital. On many occasions, in one or another year, this gentleman was

accompanied in his morning trot by one or more temporarily enthusiastic house officers, but as a rule they quickly fell by the wayside, either figuratively or actually, while he, like the brook, went on forever.

Baseball, in its cruder and more primitive form, has from time immemorial been a favorite sport of the internes. In 1890, when several celebrated college stars were in the Hospital, it was regularly practised on the then vacant grass plot where Ward X now stands. Baseball of a superior grade of excellence was then an almost everyday occurrence, and a long fly which rudely entered the windows of the neighboring Homœopathic Hospital was considered an achievement of which the batter might be justly proud and properly remembered; from these games came the annual field day contest, of which more anon. Football was also a frequent pastime on the same grass plot, though this more strenuous game was usually a trifle too vigorous for the out-of-training internes.

The permanent forms under which athletics now flourish at the Hospital are to be seen in the Annual Field Day, in the squash tennis building and the new lawn tennis courts. These three factors unite in encouraging all internes who have taken exercise in the past to continue it during their Hospital course. It is perhaps possible that one who has never taken exercise can live a working life fairly well without it; but it is certainly true that one who has been brought up in the exercise habit needs fresh air and physical exertion to keep him at the top notch of bodily condition. This well-known fact has received fresh emphasis in Dr. Emerson's paper on the sickness of house officers at the Boston City Hospital.

In 1896 Drs. Blake and Lund invited the surgical and medical externes—Drs. Bottomly, Ellsworth, McKean, Strong, Page, Sears and Pinkham — to a picnic at Riverside upon the smiling Charles. Provisions of both essential characters were stowed into dress suit cases, and the company paddled up stream in two canoes until they found a secluded spot for field sports and subsequently for swimming. This impromptu affair was a huge success, though the lunch, which was consumed in the open on the river bank and immediately after the bath, and was being eaten without the formality of

dressing, was rudely interrupted by the unexpected appearance of a canoe loaded with youth and beauty of both sexes. There was an immediate scramble for cover, one portly individual in his haste trying to hide in an empty dress suit case, but without success. The fun lasted until long after sunset, and from this time the Annual Field Day has been an invariable success.

Field Day is held in June, just before or after the Massachusetts Medical Meeting, in order to make it available for graduates who come to Boston at that time.

The programme on successive years has varied.

At first regular track games were held, including 100 and 220 yard dashes, broad and high jumps, putting the shot and team races, the latter being won by the pathological department in full burlesque uniform on one occasion. Besides these sports there are potato races, three-legged races, water sports, including swimming races and canoe tilting, and always the baseball game, which has lately become the chief attraction. At first prizes and banners were offered, and the ball game was played between the medical and surgical sides, both graduates and internes taking part. In recent years it has been contested usually between internes on one side and graduates on the other, without reference to departments. A lunch follows the finish of the games and brings the Field Day to an appropriate close.

The older members of the staff have always supported Field Day loyally, and a large proportion of them are present to watch the sports and applaud the contestants, and not infrequently to enter into competitions themselves. Without doubt Field Day has done much to increase the *esprit de corps*, which is daily growing so important to the Hospital.

In 1901 it seemed desirable to provide some form of exercise for the house officers during the winter months, and particularly one which could be utilized in stormy weather and in the evening. Pulley weights and punching bags were not attractive, but the game of squash tennis, then becoming more widely known, seemed to be the ideal thing. Already a member of the staff of the Massachusetts General Hospital had presented a squash court to the trustees for the use of

the house officers, asserting that he found that good physical condition was essential to good hospital work. It was determined to build the City Hospital courts by a general subscription from all members of the staff who cared to contribute, and more than $1,000 was subscribed in this way from thirty-four members of the staff. The trustees gave the land and as much more money as was necessary to complete two large and satisfactory indoor courts, which immediately came into favor. Several tournaments have been held, and though the intensity of the interest varies from year to year, squash has ably supplemented lawn tennis and has added new sources of enjoyment as well as health to the house officers' lot.

Lawn tennis, as already mentioned, was first played in the old court between Wards R and T. After the city closed East Springfield street and took the land as far as Massachusetts avenue, new courts were laid out on this fresh area. Four years ago this land was again graded, and now two excellent clay courts are in daily use just beyond the squash building. These courts have also been the scene of many tournaments and not a few inter-hospital contests — City Hospital internes competing with teams from the Massachusetts General and Children's Hospital, and, be it said, winning a fair share of substantial victories.

Exercise in the open air is always in its most desirable form, and these courts attract not only a large number of contestants, but also a still larger crowd of interested spectators. The visiting hours from 2 to 3 P.M. give most of the internes a period of leisure, and at this time, in fair weather, the tennis courts become the mecca for the house staff. Each year sees an increase in the attention paid to reasonable physical exercise of an enjoyable nature, and results unquestionably in an improved physical condition of the house officer.

In the facilities for games and sports thus provided, and in the tradition of exercise which is gradually growing in volume, may be seen the practical recognition of the old adage, that "all work and no play makes Jack a dull boy," and the determination on the part of the authorities to make, in so far as they may, the position of the house officer at the Boston City Hospital one of the most desirable in the world.

XXIX.

BOSTON CITY HOSPITAL. ROSTER FOR 1864 AND 1904.

TRUSTEES, 1864–65.

Aldermen.

Otis Norcross, President, George W. Warren.

Councilmen.

William Cunnston, John T. Bradlee,
David H. Coolidge, Secretary.

At Large.

Theodore Metcalf, Sumner Crosby.
William R. Lawrence, M.D.

Superintendent.

Lucius A. Cutler.

MEDICAL AND SURGICAL STAFF.

Consulting Physicians and Surgeons.

S. D. Townsend, M.D. John Jeffries, M.D.
Edward Reynolds, M.D. Silas Durkee, M.D.
Winslow Lewis, M.D. A. A. Gould, M.D.

Visiting Physicians.

William W. Morland, M.D. J. N. Borland, M.D.
Fitch Ed. Oliver, M.D. J. G. Blake, M.D.
J. Baxter Upham, M.D. J. P. Reynolds, M.D.

Visiting Surgeons.

C. H. Stedman, M.D. C. D. Homans, M.D.
C. E. Buckingham, M.D. Algernon Coolidge, M.D.
D. McB. Thaxter, M.D. David W. Cheever, M.D.

Ophthalmic Surgeon.

Henry W. Williams, M.D.

Admitting Physician.

Howard F. Damon, M.D.

Pathologist.

Charles W. Swan, M.D.

Resident Graduate Physicians.

John Dole, M.D. Clarence J. Blake, M.D.

Resident Graduate Surgeons.

M. F. Gavin, M.D. D. F. Lincoln, M.D.

Externe in Ophthalmic Department.

Ed. G. Loring, M. D.

ROSTER OF BOSTON CITY HOSPITAL FOR 1904.

TRUSTEES 1904–05.

A. Shuman, President. Conrad J. Rueter, Secretary.
Henry H. Sprague. Francis J. Keany, M.D.
Edmund D. Codman.

MEDICAL AND SURGICAL STAFF.

Consulting Physicians and Surgeons.

Edward H. Bradford, M.D. Charles F. Folsom, M.D.
Thomas M. Rotch, M.D. Vincent Y. Bowditch, M.D.

Superintendent and Resident Physician.

George H. M. Rowe, M.D.

Senior Physicians.

John G. Blake, M. D. A. Lawrence Mason, M.D.

Visiting Physicians.

G. B. Shattuck, M.D. Charles F. Withington, M.D.
E. M. Buckingham, M.D. Henry Jackson, M.D.
Francis H. Williams, M.D. George G. Sears, M.D.

Assistant Visiting Physicians.

John L. Ames, M.D. John W. Bartol, M.D.
H. D. Arnold, M.D. John N. Coolidge, M.D.

Physicians to Out-Patients.

Elliott P. Joslin, M.D. Franklin W. White, M.D.
William H. Robey, Jr., M.D. Edwin A. Locke, M.D.
Ralph C. Larrabee, M.D. Edward N. Libby, M.D.

Assistant to the Physicians to Out-Patients.

Francis W. Palfrey, M.D. (six months).

Senior Surgeons.

David W. Cheever, M.D. George W. Gay, M.D.

Advisory Surgeon.

J. Orne Green, M.D.

Senior Visiting Surgeons.

Wm. P. Bolles, M.D. Abner Post, M.D.
M. F. Galvin, M.D.

Junior Visiting Surgeons.

H. L. Burrell, M.D. Francis S. Watson, M.D.
H. W. Cushing, M.D.

First Assistant Visiting Surgeons.

George H. Monks, M.D. Paul Thorndike, M.D.
J. Bapst Blake, M.D.

Second Assistant Visiting Surgeons.

Fred B. Lund, M.D. Edward H. Nichols, M.D.
Howard A. Lothrop, M.D.

Third Assistant Visiting Surgeons.

Frederic J. Cotton, M.D. L. R. G. Crandon, M.D.
William E. Faulkner, M.D. David D. Scannell, M.D.
Joshua C. Hubbard, M.D. Walter C. Howe, M.D.

Senior Visiting Physician for Diseases of Women.

Charles M. Green, M.D.

First Assistant Visiting Physician for Diseases of Women.

Franklin S. Newell, M.D.

Second Assistant Visiting Physician for Diseases of Women.

Ernest B. Young, M.D.

Third Assistant Visiting Physician for Diseases of Women.

Leo V. Friedman, M.D.

Visiting Ophthalmic Surgeon.

O. F. Wadsworth, M.D.

Ophthalmic Surgeons.

John C. Bossidy, M.D. Edward R. Williams, M.D.
Allen Greenwood, M.D.

Assistants to the Ophthalmic Surgeons.

Robert G. Loring, M.D. Charles F. Moulton, M.D.
Peter H. Thompson, M.D.

Visiting Aural Surgeon.

George A. Leland, M.D.

Aural Surgeon.

Edgar M. Holmes, M.D.

Assistants to Aural Surgeons.

Charles D. Underhill, M.D. Charles R. C. Borden, M.D.

Surgeons for Diseases of the Throat.

Thomas Amory DeBlois, M.D. J. W. Farlow, M.D.

Assistants to the Surgeons for Diseases of the Throat.

Rockwell A. Coffin, M.D. George L. Vogel, M.D.

Physicians for Diseases of the Nervous System.

Morton Prince, M.D. Phillip Coombs Knapp, M.D.
William N. Bullard, M.D.

Assistant Physicians for Diseases of the Nervous System.

John J. Thomas, M.D. Joseph W. Courtney, M.D.

Assistant to the Physicians for Diseases of the Nervous System.

Marsena P. Smithwick, M.D.

Physicians for Diseases of the Skin.

James S. Howe, M.D. George F. Harding, M.D.

Visiting Pathologist.

William T. Councilman, M.D.

First Assistant Visiting Pathologist.

F. B. Mallory, M.D.

Second Assistant Visiting Pathologist.

Henry A. Christian, M.D.

First Assistant in Pathology.

S. Burt Wolbach, M.D.

Second Assistant in Pathology.

Charles W. Duval, M.D.

Assistant in Clinical Pathology.

Robert L. Emerson, M.D.

Medico-Legal Pathologist.

F. W. Draper, M.D.

Physician for Infectious Diseases.

John H. McCollom, M.D.

Physician for X-Ray Service.

Francis H. Williams, M.D.

Medical Registrar.

John N. Coolidge, M.D.

Surgical Registrar.

F. W. Lund, M.D.

Gynæcological Registrar.

Franklin S. Newell, M.D.

Advisory Staff, South Department.

William T. Councilman, M.D.
George W. Gay, M.D.
John G. Blake, M.D.
A. L. Mason, M.D.

Physicians to the Convalescent Home.

Edward T. Twitchell, M.D.
James A. Mahon, M.D.
John P. Treanor, M.D.

Hospital Officers.

George H. M. Rowe, M.D., Superintendent.
Frank H. Holt, M.D., Assistant Superintendent.
Samuel G. Underhill, M.D., First Executive Assistant.
Appleton W. Smith, M.D., Second Executive Assistant.
Hiram McKay, Steward.
Miss Lucy L. Drown, Superintendent of Nurses and Matron.
Greenleaf R. Tucker, B.S., Chemist.
Miss Emma B. Nichols, Assistant Superintendent of Nurses.
Miss Alice C. Berce, Second Assistant Superintendent of Nurses.
Miss Francis E. Morley, Night Supervisor of Nurses.
Miss Abbie A. Bliss, Assistant Matron.

South Department.

J. H. McCollom, M.D., Resident Physician.
Albert E. Steele, M.D., Assistant Resident Physician.
George P. Sanborn, M.D., Assistant Resident Physician.
Miss Ida Washburne, Assistant Superintendent of Nurses and Matron.

Relief Station.

John S. Waterman, M.D., Resident Surgeon.
Stuart V. R. Hooker, M.D., Resident Surgeon.
Miss Inez C. Lord, Matron.

Convalescent Home.

Miss Elizabeth C. Fairbank, Matron.

House Officers.

House Physicians.	*House Surgeons.*
For eight months ending March 21, 1904.	
Nathaniel C. Wood.	William C. Peters.
George P. Sanborn.	James A. Kelly.
Russell S. Rowland.	Stuart V. R. Hooker.
For four months ending July 18, 1904.	
Bayard T. Crane.	James H. Shannon.
Walter L. Hearn.	James A. Kelly.
Joseph Stanton.	Robert R. Hollister.

For four months ending November 21, 1904.

Henry I. Bowditch.
Walter L. Sargent.
Robert E. Andrews.
Homer B. Smith.
James W. Sever.
Louis S. B. Robinson.

For four months beginning November 21, 1904.

Warren D. Ruston.
Edward W. Whitney.
Albert C. England.
Frederick S. Williams.
John W. Lane.
Daniel B. Reardon.

Gynæcological House Physicians.

Arnold F. Furrer.
Robert E. Ellis.

Ophthalmic and Aural House Surgeons.

William F. O'Reilly.
Harry F. Holt.
Harry J. Inglis.
Henry Tolman, Jr.

Pathological House Officers.

Nathaniel H. Gifford.
Edward B. Bigelow.

Senior Medical Internes.

Isadore S. Kahn.
Louis Arkin.
Arthur D. Draper.

Senior Surgical Internes.

William Stickney.
Loring B. Packard.
Zabdiel B. Adams.

Gynæcological Interne.

Harold K. Marshall.

Pathological Interne.

Edward B. Bigelow.

Junior Medical Internes.

William L. Barnes.
John C. Phillips.
John F. Fennessey.

Junior Surgical Internes.

Leon G. Beeley.
Henry M. Field.
George P. Howe.

Surgical Dresssrs.

William P. Hager.
Nathaniel H. Gifford.
Edwin L. Drowne.

Special Externes.

Walter A. Hosley.
Andrew F. Downing.
Lester P. Gerrish.

Medical Externes.

William B. Robbins.
Charles B. Russell.
Edwin H. Place.

Surgical Externes.

Allen G. Rice.
Frank L. Richardson.
Sylvester J. Beach.

Gynæcological Externe.

Frederick L. Good.

Gynæcological Dresser.

John T. Williams.

Secret of Heart beats, Mystery of breath,
Thou in thy Kingdom intermingleth,
Thou, ever gentle Host of Life and Death!

Sickness and Suffering, faced with Courage rare:
Skill, Knowledge, Sympathy, Love and tender Care:
These the Handmaidens under thy portals fair!

. . . . . .

Mother, when years have ebbed and work is done,
Smiling, each child may know his crown is won,
If o'er his head be writ, "He was Her son."

If all his life was lighted by thy flame;—
If all his fortunes shone but by thy fame;—
If with thy wreaths be intertwined his name!

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